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To be considered the leading representative in his line of business, should be deemed worthy the ambition of any master plumber or steamfitter. The man who attains that distinction will do so only when he adopts the policy of using none but branded goods, behind whose lasting qualities the wholesaler and manufacturer stand with guarantees.

What Profit may be Expected from Central Station Heating Plants

Noting the rapid progress of central station heating as evidenced by the fact that during every year plants are installed in a considerable number of cities, and also noting the very rapid growth of the enterprise in the various cities where systems had been previously installed, it has occurred to us that a reference to this feature of public service work would prove of interest.

Believing that instead of having the article contain information descriptive of methods of construction, **it should be one containing information not hitherto published,** we have selected a city of medium size having a population of approximately 31,000, and secured the services of engineers experienced in construction and operation, to plan a system which would cover the better portion of the business district and a few blocks also of the adjoining residence district in that city, and to submit to us an authenticated proposal covering the entire cost of construction and installation of the plant, a statement of the cubic feet of space sub-divided in the various different classes of buildings situated in the district, and **an estimate of earnings, operating expenses,** etc., to be based upon the results from operation of similarly constructed live steam plants in other cities, taking fully into account the present cost of heating to individuals in said city.

* * *

We take pleasure in presenting to our readers many of the facts and figures contained in the report, which covers the installation of a little over 21,000 lineal feet of street steam mains, some as large as 20" in diameter and reaching 52 blocks.

"After a careful investigation by our engineers in the City of ————, which included the personal inspection of a considerable portion of the business and residence sections of the City, and bearing in mind your request that the proposed investment should not exceed $250,000, we selected that portion of the City covered by blue prints which we respectfully submit, and upon which is indicated a location for power house not far distant from built up territory, and showing the proposed routes and sizes of mains in the various streets. Along such routes of mains there is a total of approximately 39,683,000 cubic feet of space, and it would be a conservative estimate that at least 75% of such space may be regarded as probable heating space, and further under natural conditions new buildings will eventually take the place of many of the older ones now existing in the district, so that in time at least from 35 to 40 million cubic feet of space would be served from the mains if installed as shown.

It has been the almost universal experience of central station steam heating companies that no difficulty is encountered in securing heating customers and that after a very short period of education as to the reliability, comfort and exceedingly satisfactory nature of the service that the securing of heating customers is the easiest of any branch of public utility business, such as gas, electric light, etc., so that if we estimate earnings as based upon the serving of heat to 75% of the space now in the district, we believe that such an estimate could not be considered other than extremely conservative.

* * *

Quantity of Steam Required: Based upon data secured from a considerable number of cities and in order to establish approximate accuracy using data compiled from records of plants which have been in operation several years, we estimate that the consumption of steam during a heating season of approximately 5,800 hours in various classes of buildings 29,762,000 cubic feet of space, being 75% of the total cubic feet of space, would amount to an average season's consumption, under the meter system of charging, equalling approximately 210,087,000 pounds of steam.

* * *

Factor of Maximum Demand: By reference to compilations on the ratio of consumption for the different months of the heating season, in cities having similar climatic conditions to that of ————, it has been found that the greatest demand for steam usually occurs in the months of January and February, during which period nearly 40% of the total season's consumption occurs. The consumption of steam is very appreciably affected by changes in velocity of wind and relative humidity as well as by fluctuations in outside temperature. It has been found that the greatest hourly demand during a few of the coldest days may amount to a 50% increase over the average demand in January or February, and this factor must be taken into consideration when determining the sizes of street mains to be installed. The proposed steam mains are planned to be of sizes large enough to provide capacity for the peak demand with a pressure at the generating station not exceeding five pounds.

* * *

Investment: The investment required to purchase the property, erect and equip power plant and to install the steam heating system, including all freight and transportation of material, tools and experienced workmen, trenching, back filling, repaving, a considerable portion of which is through asphalt, and including the necessary number of meters for installation in the various buildings to be heated, and also including an estimate of 5% for incidentals, would amount to $216,262.50, and adding $3,737.50 for working capital, would make the total amount invested $220,000.00. In our accompanying estimate of cost of manufacturing steam, we have included transmission losses and steam unaccounted for, as part of the fixed charges. The balance of fixed charges will include the usual annual charge-off for depreciation on all the physical property, and will also include superintendence, meter readers, office expenses, insurance, taxes, etc., which would make an annual fixed charge of approximately $15,500.

The best fuel easily obtainable in the vicinity, which can be secured at reasonable rates and which would be of a quality most suitable for purpose of manufacturing steam, consists both of bituminous and anthracite, which should be mixed in proportion to two parts of bituminous to one part of anthracite and would cost in the power house at the present prices an average of $2.49 per ton, with which an average evaporative efficiency of at least 8½ pounds of water per pound of coal could be depended upon. Our generating cost also includes firing at 21 cents per ton and water at 8 cents per 1,000 gallons. The fixed charge cost per 1,000 pounds of steam would vary in proportion to the annual output, depending upon the percentage of total amount of space heated, as will be noted later in the report.

* * *

For a basis of determining probable income, the rates in other cities have been taken into consideration, as well as the present cost of heating by the individual consumer, and a sliding scale cumulative rate has been determined upon, with a view of having such a character of rate that the larger consumer may be able to purchase his heat at an average less price per 1,000 pounds than the smaller consumer. When applying this rate to the probable consumption of steam in the different classes of buildings heated, carrying the estimate of consumption, etc., through the various months, we find that the rate suggested would result in an average rate of 65 cents per 1,000 pounds of steam sold.

On the basis of total investment, the cost of manufacturing and delivering steam, the fixed burden, various operating the generating expenses, and the probable rate and season's income, we find that **the Company would be able to meet all fixed expenses, including depreciation, etc., as noted, when supplying steam to approximately 12.6% of the total amount of space in the proposed territory; when serving steam to 25%** of the **total space they in addition would be able to pay a dividend on their investment of 7.8%; when serving one-half of the space—a dividend of 24.1%; when serving 75%—a dividend of 37.8%, and when serving the total amount of space, a dividend of 52.7%.**

* * *

Among the chief factors which should be considered and which also affect and determine the degree of success of a district steam heating plant in any City, are the following:

1. The climatic conditions of the locality should be such as to furnish a good market for the sale of heat.
2. The generating station should be reasonably adjacent to that portion of the City which will produce the greatest volume of business for the least investment.
3. The local conditions under which steam is sold for heating should be such as to permit fixing a rate, which, while well within economic limits, from the standpoint of the consumer, can still be sufficiently high to pay a satisfactory profit on the investment, over and above the cost of manufacture of steam, including depreciation, etc.
4. The management should be efficient.
5. The meter system of charging.
6. The proportion of business secured to total amount procurable.
7. The installation of the plant under such methods

of construction as have through years of experience proved to be efficient, and which are regarded as standard, and in which the transmission losses are reduced to a minimum and the depreciation low.

Roughing-In Stacks and Branches

III*

EDITED BY JNO. K. ALLEN

Mem. Am. Soc. Inspectors of Plumbing and Sanitary Engineers; Mem. Royal Sanitary Institute of Great Britain; Assoc. Mem. Am. Soc. Heating and Ventilating Engineers; Hon. Mem. Chicago Architectural Club.

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FIXTURE OUTLETS TO SOIL STACKS.

The kind of fittings to use for stack outlets are of no less importance than the number and location of outlets. Owing to the fact that there is no possibility of sewage backing up in a soil or waste stack when discharged into it from a branch connection, greater latitude is allowable in the selection of fixture branches. For instance connections to horizontal chains can be made only with Y fittings, half Y fittings, or long turn TY fittings. On the vertical stacks, however, in addition to the fittings permitted in the horizontal drains, short TY fittings may likewise be used. The use of short TY fittings is made permissible by reason of the fact that sufficient turn is given the branches to throw the inflowing sewage in a downward direction, and for the further reason that a Y fitting, and ⅛ bend, or a long turn TY fitting, would bring the outlet so far in the room, that the closet fixture would have to be set clear from the wall; while short turn TY fittings permit of the closet outlets being roughed-in at the proper points.

Whether a Y fitting or a TY fitting shall be used will depend in each case on the layout of the fixtures, and the way the plumber has planned the roughing-in. As either type of fitting may be used, he is at liberty to make his own choice. It had not ought to be necessary to remark that while there is great latitude in the type of fittings that may be used on vertical stacks of soil and waste pipes, that the use of T fittings is not permitted. When fittings of this design are used the sewage, instead of being turned in a downward direction and flowing uninterruptedly, has its momentum checked by being dashed against the wall of the soil stack opposite the entrance, thereby splashing and spattering the dry part of the pipe above the inlet. This is not so objectionable a matter at the lower branches to a stack, for subsequent flushes from further above on the line will wash most of the adhering particles away; but on the very top connection to the stack, the particles would adhere to the inside of the pipe until destroyed by putrefaction or fermentation.

In frame buildings where the roughing-in for the bath room or toilet room can be run in the floor space between the joists, the plumber should plan his work ahead of the carpenters and when they are framing the building, see that they frame around the soil pipe outlets for water closets so that the lead bend can subsequently be installed, without cutting or removing the floor beams. A little forethought in this respect will save considerable time for the plumber, as well as for the carpenters, and will insure a better framing of the timbers than will obtain if the framing has to be done later. The architect and carpenter will gladly co-operate with the plumber to that extent, if, when the framing is started, he will state to them his desires, and mark on the plans just where the various pipes will be located. It will be well to take up with them at the same time the advisability of making partitions in which pipes will be located, extra deep so the pipes can be fully concealed without the hubs showing through the plaster to discolor the walls with rust.

In some buildings, where, on account of a beam, or for some other reason, the lead roughing for the bath rooms or toilet rooms cannot be run in the space between the floor beams, and they cannot be exposed below on account of the room beneath being of too great importance in the building, the outlets have to be located above the floor level, and the floor stepped to accommodate the roughing. This is not a desirable way of installing plumbing work, when it can be avoided, but, unfortunately, it sometimes is absolutely necessary. In such cases the question becomes of importance, whether to step the whole floor of the room, or just the portion where the fixtures are located. In bath rooms in private dwellings, or in hotels, when necessary to

This tells about Fixture Outlets to Soil and Waste Stacks and size of Soil Stacks.

*Previous installments in this series of articles were published in the issues of January 23 and 30. These numbers can be obtained for 10 cents a copy.

do any stepping it is better to step the entire floor of the rooms clear over to the entrance door. In large toilet rooms of public buildings, on the other hand, such a procedure would be an unnecessary expense without adding one bit to the convenience or utility of the arrangement. In such places, the better practice is to step only that portion of the room where the fixtures are located and the raised platform need not extend much further into the room than past the edges of the closet compartments. Stepping of fixtures is but a compromise, at best, and should be avoided where possible.

Size of Soil Stacks.

Unfortunately, the practice of plumbing is still in such an empirical state that there is no uniformity of practice in the various cities regarding the sizes of soil and waste stacks, best suited to a given purpose. Some plumbing codes require a certain size of soil stack for a given number of stories to a building, regardless of the number of fixtures on each floor, which discharge into the line. Other cities require a certain size of pipe for a given number of fixtures, but the number varies with different cities, and at best, the size of pipe required for the given number was arrived at by guess work. However, in cities where plumbing laws are in force, there is nothing for the plumber to do but blindly and submissively follow the requirements of the code. Outside of such cities, however, where initiative is still left the plumber, there is room for improvement, particularly in the size of soil pipe required for ordinary buildings. It may be laid down as a rule, that the size of water closet connections to soil stacks, need never be over 3 inches in diameter, and that in private houses or other buildings where not more than three bath rooms are connected to a stack, the vertical line need not be over 3 inches in diameter. The practice of using 4 inch soil stacks for private houses is fast dying out, like the old pan closet which gave it vogue, and in the present-day practice, closet branches and the stacks to which they are connected, are made but slightly larger than the outlets to contemporary water closets. The modern types of water closets, like the wash-down, siphon and siphon-jet, have much smaller outlet passage than the old-time obsolete closets like the pan and plunger closets, and much smaller than the objectionable washout closets, still in use. In siphon-jet closets, the outlet passages in some are restricted to about 1¾-inch diameter, while in not over 10 per cent of them can a 2½-inch ball be rolled through. This being true, wherever unhampered by plumbing codes, which have not been brought up to date, the present practice is to use 3-inch branch connections to water closets and install 3-inch soil stacks in buildings where not over three bathrooms or the equivalent of other fixtures discharge into the line.

There is a distinct structural advantage gained by having the soil pipe in private houses only 3 inches in diameter, to say nothing of the increased efficiency and interior cleanliness of the line. Stacks which are only 3 inches in diameter can easily be concealed in an ordinary 4 inch partition, such as is built in dwelling houses, and the hubs will not stick through the plaster nor show in other ways.

Supports for Soil, Waste and Bent Stacks.

It is necessary when installing the drainage system that the various stacks of soil, waste and vent pipes be securely supported, so that by subsequently settling they cannot pull away from the several fixtures to which the branches are connected. Not only must they be supported to prevent settlement, but furthermore they must be so secured that the lines cannot sway or vibrate or otherwise move about to the injury of the system. In tall buildings, each stack should be securely supported at the base by a masonry pier or iron pipe-rest. When the stack is so supported, if there are no off-sets to the line, there will be little or no danger of settlement and the supports used at each floor will be needed more to steady the pipe than to support it. For this purpose, ring hangers, through which the pipe can be slipped until it rests on a hub or fitting, is the best kind of a support to use. These hangers will keep the line from getting out of alignment, while at the same time, should the building settle, the rings will slip down over the pipe without imposing on the stacks any extra stresses.

Outlets to Waste Stacks.

The outlets to waste stacks is so much a matter of individual design by the plumber who installs the work, that no hard and fast rule can be laid down regarding where the openings should be located. Some workmen prefer to rough-in the soil and waste stacks leaving outlets with the hubs projecting through the plastered walls, so that the lead connections to the fixtures can be made after the building is plastered and all other workmen out of the way. In some localities they are forced to this practice by the liability of having the lead pipe torn out and sold for old metal after the work has been installed at great expense. Other plumbers leave the outlet below the level of the floor, and extend the waste pipe through the floor so that the waste pipe from the fixtures can finish with a flange joint at the floor line. Still, other

plumbers prefer to conceal all the roughing-in pipes in the walls and partitions as that practice insures a neater finish to the work. Whatever method is adopted in any case, the outlet should be left sufficiently low so that the waste pipe will have a good fall to the waste stack. In order to judge the right height to leave the outlet, it should be borne in mind that ordinary fixtures, like sinks and lavatories, are set 2 feet 6 inches above the level of the finished floor, and the outlet for such fixtures must be left low enough to allow not only for the depth of the fixture, but in addition for the space taken up by the fixture trap. Urinals are set much lower than other fixtures, from 22 to 24 inches being the height of the lip, so that in roughing-in for urinals, the outlet must be left exceptionaly low. Laundry tubs are another type of fixture which must be roughed-in low, not that the top of the tubs are set much lower than a sink or lavatory, but, owing to the depth of the fixtures, the bottoms are seldom over 10 inches above the level of the floor, and the outlet to the trap will of necessity be some inches lower.

To be continued. All rights of republication reserved.

The Effect of Wind on Heating and Ventilating*

By H. W. Witten.
Associate Member of A. S. H. V. E.

For some years the writer has been a close observer of the action of wind on modern types of buildings as affecting heating and ventilating. The problem confronting the engineer in modern heating is to provide sufficient heat and air change in any weather condition liable to occur. It is clear that if there are conditions in the building that are liable to be greatly affected by wind variation, that he must estimate their effect on the interior of the building. The most vulnerable places for the wind to exert its varying influence are the windows. These are usually made of the sliding type, and, in order to be readily movable in all seasons, must have at least 1/16 inch clearance all round. This clearance is usually greater. The inward or outward movement of air through these crevices is practically unimpeded and is nearly proportionate to outside conditions. Tests made with a fan forcing air against a sash show that a pressure equal to a wind movement of fifteen miles per hour will force about 185 cubic feet of air through one lineal foot of sash crevice 1/16 inch in width in one hour. Tests taken on sash in the open show that an average of 146 cubic feet per lineal foot per hour comes through the same space when an actual wind of fifteen miles per hour prevails.

The effect of this air leakage was tested on a steam radiator, but because of the variation of interior conditions of the radiator due to the fact that the pressure varied at times, that the steam was sometimes wet and at other times dry, and that more or less air mixed with the circulation; an electric radiator was substituted. The heat from this radiator was fairly constant and could be readily checked. The action of air leakage on this radiator was readily apparent. A testing house was constructed, in which the walls were practically proof against heat loss. A window was placed in one side, which could easily be replaced by others of different clearance or with ones provided with wind-stopping devices. This house could be rotated so as to face prevailing winds.

These wind velocities and outside temperatures were recorded, also the time required to raise the interior temperature, by means of the electric radiator a certain number of degrees. The current being shut off, time observed during which the temperature fell to starting point. This operation was repeated until the walls practically ceased to absorb heat. The sash was then changed for others of different clearance, which were subjected to the same test. Sash with insulating devices were also tested. These tests conclusively demonstrated that the average ratio of heat loss by leakage as the wind increased was, in the case of a sash with 1/16 inch clearance, 25 per cent. per mile, or for four miles' increase in wind velocity the leakage heat loss increased 100 per cent. In the case of the insulated sash the leakage heat loss increased at the average rate of 5 per cent. per mile of wind movement.

The actual comparative leakage heat loss between a sash with 1/16-inch clearance and the insulated sash, with a difference of 44 degrees of temperature during a 15-mile wind, was as 5 to 1. The comparative cubic leakage being as 9 to 1.

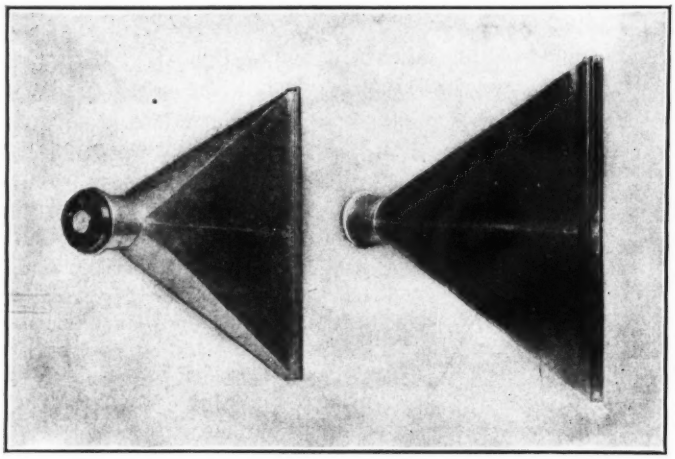
The average wind movement in localities where heating is important is about thirteen miles per hour during the heating season.

Increasing velocity of wind tended to decrease the rate of progression of loss and leakage, presumably because the pressure of the wind held the sash more tightly against the stops while its effect on the glass itself continued. It was evident from the

*Presented at the fifteenth annual meeting of the American Society of Heating and Ventilating Engineers, held in New York City, January 19-21, 1909.

investigations thus far pursued that, if windows were properly insulated, the radiation calculated against this heat loss from inleakage could be practically eliminated, and the writer has followed this practice successfully on the basis of the prevention of inleakage. In further looking into this subject, however, another and still more important phase of the effect of wind has appeared.

In order to test quickly the wind leakage in various buildings, particularly those where a dispute as to the efficacy of the apparatus occurred, an instrument was designed for the purpose of measuring leakage through any section of window joint, taking in about two lineal feet. The accompanying cut shows its construction. A 4-inch anemometer placed in the nozzle showed the air movement. Very



Instrument Designed for the Purpose of Measuring Leakage Through Window Joints.

many tests have been taken with this instrument, and have shown uniformly that the outflow from window crevices on the leeward sides of buildings exceeds the inflow from the windward sides. Especially is this true in the case of buildings heated by the indirect method with forced circulation. The expanded warmed air in the rooms on the windward sides of the building exerts a repelling force against inleakage, and is sufficient to overcome that caused by moderate winds of three to four miles per hour. Above this velocity inleakage occurs, increasing with the outer wind movement. This inleakage is met by the warmed air inflow, mainly in the upper portion of the room, and mixes with it to some degree. The greater portion falls by natural gravity to the floor and causes cold currents rising in spurts wherever it meets a warm human body, but the bulk of it is added to the vent flow. It has in the meantime upset the *calculated* circulation from the inlet to the vent. In cases of this kind the thermometer will frequently register 70 degrees on the wall and 58 degrees on the floor. Direct radiation placed under the windows is a frequent makeshift to remedy this situation. The conditions on the leeward sides are worse from either a heating or ventilating standpoint.

Not being opposed by wind pressure, the expanded air will escape by its most natural channel, i e., the window crevice. It is usually introduced near the upper part of the room, and is *expected* to escape by means of the vent near the floor. Experiments have shown that the addition to the flow of the vent on the windward side from inleakage is much less than the subtraction from the flow of the vent on the leeward side caused by outleakage. In these cases the rooms were partitioned and a hall intervened.

The action of the wind blowing around and over the building is the undoubted cause of this acceleration of the outleakage. As it sweeps by, an area of low pressure is formed in the lee of the sheltered side. This area exerts a siphonic action on every crevice in the sheltered side of the building, and is a continuous air pump on the interior supply of heat units. As most of these crevices are above the normal breathing level, the loss from them is absolute. In a school building, recently examined by the writer in Pittsburgh, it was found that the aggregate free opening around 150 windows averaging 4 feet 6 inches in width by 7 feet in height was approximately 46 square feet, or about 44 square inches per window. The required 30 cubic

feet of air per minute, even when supplied at a temperature of 120 degrees, failed to warm this building during moderate winter weather.

The results of a series of tests taken recently in the tower of the Public Building, Philadelphia, are as follows: Average outside temperature, 38 degrees. Inside temperature, 70 degrees.

Instrument shown in cut used with an anemometer 4 inches in diameter. Average sash clearance 1/16 inch.

Lineal inches of crevice covered by the instrument 24.

Area of crevice	1.5	inches.
" " anemometer	12	"
Rate of outside wind	1,020	feet per minute
" " inleakage	125	" " "
" " outleakage	146	" " "
" " outside wind	975	" " "
" " inleakage	90	" " "
" " outleakage	109	" " "
" " outside wind	1,240	" " "
" " inleakage	119	" " "
" " outleakage	141	" " "
" " outside wind	1,420	" " "
" " inleakage	140	" " "
" " outleakage	158	" " "
" " outside wind	1,350	" " "
" " inleakage	132	" " "
" " outleakage	149	" " "

A comparison of these figures shows that the average outleakage is from 15 to 20 per cent. greater than the inleakage.

I have found that the average rate of inleakage in many buildings tested was about 10 per cent. less than that shown in the testing-house experiments and that the rate of outleakage was about 10 per cent. greater.

This is probably due to the fact that the cubic contents of the testing house (about 78 cubic feet) as compared with the lineal feet of window crevice in it (14 feet), was less than average room conditions. A room with 16 feet exposed wall, 12 feet deep, with two windows 6 feet high by 3 feet wide, would be nearly typical. Such a room would contain 1,920 cubic feet and have 42 lineal feet of window crevice. In the testing house the proportion of window crevice to cubic contents is 1 to 5.5. In the typical room mentioned it is approximately 1 to 46.

The effect of this greater volume of expanded air would be to retard the inleakage. Contrariwise, it would tend to accelerate the outleakage, which is also influenced by the suction from the area of low pressure existing on the sheltered sides of the buildings.

The writer had, previous to these tests, used, with good results, the formula published by Prof. John R. Allen. This formula is as follows:

$$\left(\frac{W}{4}+G\right)d\ n$$

W = square feet exposed wall.
G = square feet glass surface.
d = difference between inside and outside temperature.
n = leakage and wall filtration.

In this formula $n = 1.5$ to 2, according to conditions of wall construction, fitting of windows, etc.

With windows properly insulated, this formula may be modified as follows:

$$\left(\frac{W}{4} d\ n_1\right)+\left(G\ d\ n_1\right) \text{ in which } n_1 = 1.1.$$

This formula, while to some degree empirical, is more logical than any now in use which contain a variable factor for leakage. With window insulation the interior condition becomes stable and the maximum loss in any wind known. Artificial circulation is not interfered with or upset, and the control of inward or outward currents is established.

Mexico's Water Works Improve.

There are some primitive and unique systems of water works in Mexico, one of the most remarkable being found in Uruapam, state of Michoacan. In parts of that town the water is carried in wooden box troughs through buildings and across streets at a height of 8 to 12 feet from the ground. Holes are cut in the walls of buildings to accommodate this odd "main." The ancient and cumbersome systems of water distribution in the larger cities and towns of Mexico are being done away with rapidly, and the public utilities that have taken their places are modern and up to date in every respect, says the Philadelphia Record. There has been great activity in the establishment of modern water works systems in many cities and towns the last few years. The federal government has given financial aid to several enterprises of this character, particularly in the port towns of the Atlantic and Pacific coasts and in the capital of the republic.

Timely Warning.

"John, John, there's a burglar in the house. I hear him downstairs in the cupboard."

"Where you put that pie?"

"Yes! Oh, John, where are going?"

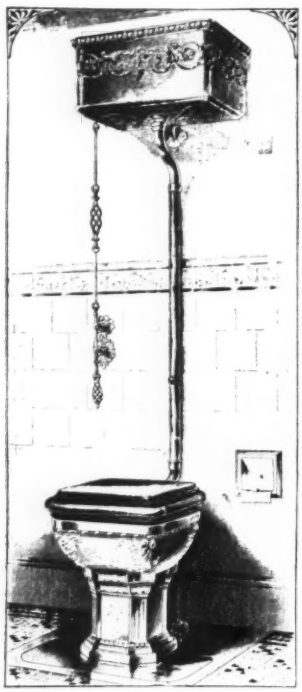
"I'm going down to save his life."—Boston Transcript.

In Early Days—XVII

By Herbert S. Renton

Syphons and Pulchritude.

(Continued.)



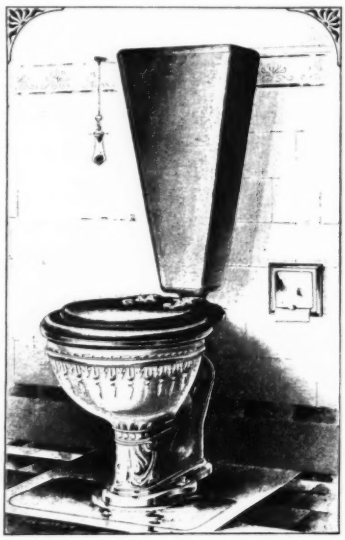
The "Renaissance," with seat and cover finished in white enamel, cistern in white and gold, nickel plated brass pipe.

The "Primo," made in the "Rennaissance" model, with white enameled seat and cistern, embossed in white and gold with an ornate brass fan bracket and nickel-plated flush pipe, nickel-plated brass guide and rod with cut glass pull was a very distant relative indeed of the old pan closet which was universal a few years before. The list was $107 and 20 per cent only.

The Primo Improved, with one of the early pattern tapering low-down tanks, like a flattened cornucopia, could be had for half the rate of the "Rennaissance," and a good deal cheaper than Boyles' "Tidal Wave." It could be had with a 2-inch local vent if desired. Much ingenuity was extended on fore and after wash arrangements and local venting. Local vents are about as much use as brown paper for wrapping up compliments, but how many claims have been gravely put forth that at last this or that maker has succeeded in making a local vent that would really take away all odors from the bowl as surely as the syphon carried out the soil. Then again the **noiseless** closets have been legion, and liars, too. A good noise absorber would be welcome. Why cannot some genius invent something that can be placed in a room and absorb the noises of the house and street as the suction dusting and sweeping devices draw in dust and dirt? Meanwhile the real noiseless closet has not arrived.

One of the "last of the Wampanoags" of the old Plungers was the "Hogan" side outlet valve closets, advertised by Peck Bros. & Co. in the catalogue of 1893, one of the finest ever issued up to that time. It went the way of all the rest.

The Kelly Light Tank with the Kelly Ball Cock in 1884 was a great boon, as I have shown in a former paper solving the freezing problem. John Kelly, who holds 40 patents on closet devices, overcame a difficulty when in the early '80s the taking out of branches from the trap below the Kelly Short Hopper, by plumbers, spoiled its operation. He simply put in a flanged copper sleeve between the hopper and trap, which syphoned past all possible openings. It is hard to beat Chicago on the Kelly boys. If Yerkes could have solved the Chicago river tunnel problem as easily and syphoned passengers through, he would have done something. I have on several occasions had time to "think it all over" while the cable car was stalled under the river—but no solution being forthcoming the tunnel had to be abandoned without serving its day and generation.



The "Primo Improved" embossed, with "Perfecto" seat and cover, and low-down tank.

In the days I have been living over again in the last few weeks there was no elevated system in Chicago, and New York had not entered upon the era of the skyscraper. No X-rays, wireless messages or phonographs in Boston or moving pictures in Baltimore. There was no giant bronze figure of William Penn looking out over Philadelphia from the lofty post office tower, and St. Louis could not talk with Kansas City or New Orleans by 'phone, for in the early days of the pan-closet age no telephone existed. There were no bridges over or tunnels under the rivers at New York, and the elevated road was in the future.

In Chicago, the houses on the west and south sides were stuck up on 8x8 or 12x12 wooden blocks, the sidewalks were made of planking and the roadways were round sections of forest trees. All of the manufacturers in plumbing goods were very small concerns. Modern plumbing has all been developed in my time. I have seen the small shops become great factors in the life of the city and nation, and many, too, who flourished like the "green bay horse" of the stump speaker, I have seen dwindle, peak and pine, and finally go down and out. But the world goes on, and only the optimist is the wise man. There were always the workers and the shirkers, the maker and the fakir, the thinker and the blinker, and tomorrow is a new day. If we could only expel the foul air and start a syphon that would carry away all dread, fear and hate, it would be a good thing even if it only worked intermittently until such time as we could grasp the unchanging principle of right living in its fullness and scour away evil altogether.

Domestic Engineering's Data Sheets

23

Feb. 13, 1909

These sheets may be had printed separately for preservation in a binder. Price 10 Cents

Published by Domestic Engineering, Chicago, 1909

FOR HEATING AND DRYING

Capacities, Speeds, and Horse Powers of Fans Delivering through Heater.

Contributed by Massachusetts Fan Company.

Air Velocity	Size of Fan	18	24	30	36	42	48	54
600	Cu. Ft.	1060	1885	2945	4241	5773	7542	9540
	R. P. M.	523	393	314	262	224	196	174
	H. P.	.050	.089	.149	.201	.274	.358	.453
700	Cu. Ft.	1237	2199	3436	4948	6735	8799	11130
	R. P. M.	611	458	367	305	262	229	204
	H. P.	.067	.120	.186	.269	.365	.478	.604
800	Cu. Ft.	1414	2514	3927	5655	7697	10056	12720
	R. P. M.	698	524	419	349	299	262	233
	H. P.	.101	.180	.284	.415	.550	.718	.909
900	Cu. Ft.	1590	2828	4418	6362	8659	11313	14310
	R. P. M.	746	589	471	393	336	295	262
	H. P.	.136	.242	377	.544	.742	.971	1.22
1000	Cu. Ft.	1767	3142	4909	7069	9621	12566	15904
	R. P. M.	873	655	524	436	374	327	291
	H. P.	.194	.344	.537	.773	1.05	1.38	1.74
1200	Cu. Ft.	2120	3770	5891	8483	11545	15084	19080
	R. P. M.	1047	785	628	524	449	393	349
	H. P.	.285	507	.791	1.14	1.56	2.03	2.56
1400	Cu. Ft.	2474	4399	6873	9897	13469	17598	22260
	R. P. M.	1222	916	733	611	524	459	407
	H. P.	.463	.821	1.28	1.85	2.51	3.29	4.16
1600	Cu. Ft.	2827	5027	7854	11310	15394	20112	25440
	R. P. M.	1396	1047	838	698	598	524	465
	H. P.	.698	1.24	1.94	2.79	3.80	4.97	6.29
1800	Cu. Ft.	3181	5656	8836	12764	17378	22626	28620
	R. P. M.	1571	1178	942	788	676	589	523
	H. P.	1.00	1.78	2.78	4.02	5.46	7.12	9.02
2000	Cu. Ft.	3534	6284	9818	14138	19242	25140	31800
	R. P. M.	1745	1309	1047	873	748	655	582
	H. P.	1.23	2.18	3.42	4.89	6.70	8.79	11.1
2200	Cu. Ft.	3887	6912	10800	15551	21166	27654	34980
	R. P. M.	1919	1440	1152	960	823	720	639
	H. P.	1.61	2.85	4.46	6.46	8.79	11.5	14.5
Area in Sq. Ft.....		1.767	3.142	4.909	7.069	9.621	12.57	15.90

NOTE—The above table gives the *actual* power to be delivered to the shaft of the fans while delivering the specified quantities of air through a regular "hot blast" heating coil.

Learning the Craft—V*

By Phoenix

Written expressly for "Domestic Engineering." All rights reserved.

"The Average Master."

For the last fifteen years from the North, South, East and West we have had drummed into our ears the cry of, **"The Average Master Plumber Is a Poor Business Man,"** and "the Average shop does this," or "the Average heating contractor does not know"—well, about one thousand general facts that would exhaust the patience of Job, until it would seem as if nearly every master plumber would desire to take a gun and shoot the word "average" entirely out of the dictionary.

Many people, who **think they understand,** try to explain **what** to do; but few and far between are those who **know how.**

A man with but a very common education, and a fair amount of judgment, can rise above his station, **in America,** if he has any "spunk."

Therefore I say: **Get out of the Average class.**

Either sink to the bottom of despair, **and stay down** never giving forth one bubble of protest, or get "strenuous" at once and note your rise to better positions, more work, and the respect of your fellowmen to a degree of which you little dreamed.

"De Plumber!" It is time that **that** word ceased to be looked upon as a "mark" for all the comic papers and referred to in terms of scorn.

A few moons ago I heard a master say, "We fellows need to take a business course and learn bookkeeping, **and how to run our shops better."**

What most people in the plumbing and heating business need is, **A Course in Good Horse Sense.**

That course can be studied **at home,** will pay 100% on the dollar and begins **with yourself, in your own shop.**

It is a source of regret to notice how few in the business can **sell goods instead of cutting prices.**

Put four out of five masters where they must **dig up work,** in the place of **merely installing the job,** and they are generally up against it.

Not one master in twenty can go into a strange town and sell a bath room outfit, or heating job to a **stranger who may actually need it, and who could afford it,** but who may not be thoroughly aware of the fact.

Right here is where the master plumber, or master fitter **falls down** completely.

And to think that it is absolutely needless, and that by the use of a little tact, energy and time, the **business of each shop could be nearly doubled.**

Observe the agents who sell sewing machines or pianos.

How persistent they are, the miles they travel to get business, and the immense number of pianos and sewing machines **already sold in our country.**

Neither the sewing machine or the piano proposition **are in it one moment** with the **plumbing business** and yet these agents succeed while the master sits around and howls "no business." **Get out and dig up some business.** Do not worry the architect, there is plenty of business lying around of which he is ignorant, **and never would touch, anyway.**

If you do not know what to do, nor where to go, just nose around town, run up against difficulties, for it is the best way to get wise. **Mingle with your fellow beings.**

See the little insurance agent busy as a bee, what a nice sweet conning song he sings so cheerfully; put a clean white collar on, **stiffen up that spine,** a plumber's **as good** as a **merchant almost any old time.**

How many shops have a list of prospects?

Prospects means this:

1. People in your town, vicinity, city, or state who are **talking** or **thinking** of putting in either plumbing or heating.

2. People who have hot air furnaces which cumber the earth, **and should be torn out.**

3. People who have **ample means,** but are merely **hibernating, winters,** in one or two rooms in some large barn of a house, and who **do not realize the comforts of good plumbing and heating unless you tell them.**

Can you do so? If not learn how. It will be the **best paying lesson you ever mastered.**

Some of these people have not had **water on their backs in fifteen years** and you pretend to sell sanitary fixtures!

4. **The Farmer's trade;** and this is probably the best chance of all, for masters in towns and cities under 100,000 population.

The farmer pays cash, and is, when satisfied, generally sure to land you more customers in a year or two, and the farmer is **beginning to buy plumbing and heating goods,** many times, of the mail order houses; which is **due to the negligence of the master plumber** in not cultivating this profitable branch of business. When mail order houses can pocket a profit of more than **quarter of a million dollars a year** in the plumbing and heating business, **it is time some body awakened.**

In the four different business fields mentioned, nothing has been said about blue prints or getting jobs from the architect.

This article tells how to run your business with Horse Sense

Do not wait for the jobs to **come to you to be figured. Go after the jobs.**

This policy is a direct reversal of the general custom and means for you to **get out and hustle every day,** and, in fact, **become a drummer.** You cannot expect to sell an outfit as you would a shoulder of ham. In fact you **are a ham** if you do.

Endeavor to **grasp a few common sense ideas** that

*Previous articles in this interesting series were published in the issues of January 16, 23, 30; February 6. These back numbers can be obtained for 10 cents a copy.

would appeal to a person having little knowledge of plumbing or heating, and form these ideas into a plausible convincing line of argument leading up to the grand climax, which is, of course a job.

You can make your story entirely suited to your locality and, by practice, will in time acquire a line of talk suitable to almost any class of customer, who is in a calm frame of mind. You can have this information so well grounded that you can push the button and spring any particular argument on the necessary occasion.

As time passes and your acquaintanceship increases, you will, from sheer force of circumstances, acquire some tact and skill in reading human nature and ease in approaching strangers, until it will become a source of satisfaction and pride to you to match your wits against theirs.

When you have reached this stage, compare your business with what it formerly was and note cash results.

A man who knows his business, and is able clearly and convincingly to demonstrate the fact is respected and the confidence of his fellow men comes to him naturally and without being asked for.

Such a man can get and hold trade and has been doing so right along all through this financial depression.

Why not abandon the Rip Van Winkle pose and get busy along new lines? C. Columbus tried about thirty years before he finally discovered America.

Who knows what you may dig up?

Kinks and Wrinkles

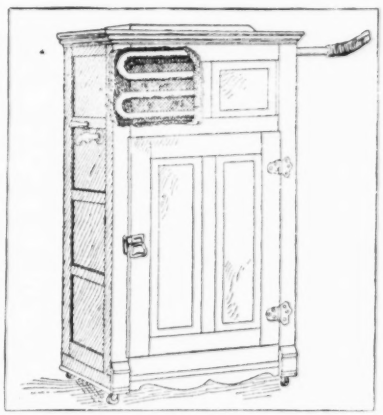
New Tool that Bores Square Holes.

Perhaps the reason that "so many square pegs are fitted into round holes" is the difficulty of making square ones. The method heretofore has been to bore round holes and then work them out by hand, or with a slotter, a laborious and time-consuming operation. To bore square holes sounds paradoxical, nevertheless it is done, and that with a three-cornered bit. The three-cornered bit has, of course, something besides a pure-ly rotary motion about a fixed axis, and that is the interesting point about this appliance which has just been placed on the market.

The peculiar motion by which the three-cornered drill is made to bore a square hole is imparted to it by a special chuck, which can be fitted upon any ordinary drill-press, lathe, or milling machine. This chuck consists of a few simple parts, one of which is screwed directly onto the spindle of the machine, while another part, driven by it receives the rotary motion with a certain amount of side play, the side play being limited and guided by the third part of the chuck, which stands still. The shank of the drill is three-cornered with convex sides and is just large enough to turn in the square guide of the stationary part of the chuck. The result is that the three corners of the shank travel around the sides and enter into the corners of the guide while at the same time the three corners of the cutting edges of the tool strike out a square in the work. The result is highly successful, as the new tool can be used for boring square holes in cast iron, steel, brass or wood, and with the same facility and a speed almost equal to that with which a round hole can be bored.

A Simple Refrigerating Plant.

The following description with accompanying illustration of a simple way to make a refrigerating coil for a common refrigerator was contributed to a recent issue of "Popular Mechanics" by H. G. Head, of Louisville, Ky.: "Finding it very hard to always have ice water in a small tank I sought a remedy for this so as to have ice water at all times. The measurement was taken of the interior of my refrigerator in the ice compartment. The tinner made a coil for



How to Make Water Coils for a Refrigerator.

me by using heavy block tin pipe of a size to fit inside a 5/8-in. hose. This coil was made with several turns of the pipe and fitted against the front part of the ice box. One end extended out on one side of the refrigerator to which was attached a hose connecting to the water faucet. The other end of the coil was soldered to a spigot that projected through the other side of the refrigerator. The coil is shown in the sketch through a broken portion of the ice box. By making the connection to the water supply with a hose the refrigerator can be moved without causing a leak."

Dollar Steel Now Ten Cents.

A new process of making tool steel which will reduce its cost from $1.03 a pound to 10 cents! This is one of the new methods connected with the iron and steel trade, with which the recently formed Canada Steel Company, at Ottawa, Ontario, will begin business. Onlookers recently viewed the transformation of a rusty nail into a razor-edged knife in three minutes and a piece of raw ore into cold chisels which can cut through boiler plate. The minister of mines, the Hon. Mr. Cochrane, sees in the new discovery the means of setting Ontario first in the world in the steel trade. This would be a surprise for the province, as even her best ore has been left unmined because of lack of adjacent coal fields.

Fourth Annual Meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers

Omaha, Neb., Feb. 8 (Special).—The early registration of attendants showed a lively interest in this young but vigorous society. The meeting room was in the Hotel Rome, a splendidly equipped hotel which was enjoyed as headquarters.

The Registration.

The register showed the names of the following persons who were in attendance:

Edward Quinn, St. Louis.
C. S. McCosker, Mobile, Ala.
A. C. Shaver, Pasadena, Cal.
Chas. B. Ball, Chicago.
H. W. McVea, Omaha.
C. F. Madden, Green Bay, Wis.
H. J. Baker, Omaha.
John C. Alford, Chicago.
E. A. Richardson, Benton Harbor, Mich.
J. W. Watson, Des Moines, Ia.
George W. Wood, New York.
F. W. Heck, Chicago.
W. G. Williamson, Detroit.
Philip Kimche, Detroit.
George W. Feaster, Trenton, N. J.
C. M. McHugh, Cedar Rapids, Ia.
T. J. Farrell, San Francisco.
Burton J. Ashley, Chicago.
B. J. Herrick, St. Louis.
John Hefferman, Houston, Tex.
G. D. Dorsey, New York.
J. D. Blake, Rock Island, Ill.
Frank K. Chew, New York.
Robt. H. Ellithorpe, Fresno, Cal.
Murray F. Kirkwood, Kansas City.
W. H. Jennish, Waterloo, Ia.
John E. Harbison, Schenectady, N. Y.
H. S. Winterhalter, Bayonne, N. J.
Frank W. O'Neill, Joliet, Ill.
Edward Black, Omaha.
Wm. H. White, Buffalo, N. Y.
Charles I. Putts, Baltimore, Md.
J. M. Mullen, Davenport, Ia.
Otto Meinert, Davenport, Ia.
F. W. Cloutier, Minneapolis.
John P. Freeman, St. Joseph, Mo.
Isaac R. Carver, Pittsburg.
Henry B. Davis, Washington.
O. B. Craig, Pittsburg.
M. Conroy, St. Paul.
I. A. Lederer, Bloomington, Ill.
H. F. Clark, Decatur, Ill.
Geo. R. Stolz, Milwaukee.
Alvin P. Peterson, Moline.
Woodworth Clum, Trenton.
Frank A. Hassel, Burlington, Ia.
P. J. Madden, Chicago.
Mrs. P. J. Madden, Chicago.
P. P. Fodrea, Omaha.
H. S. Rumsey, St. Louis.
James G. Houghton, Minneapolis.
Jno. K. Allen, Chicago.
C. H. Withell, Omaha.
C. R. Schmidt, Baltimore.
H. B. Zimman, Omaha.
J. C. Watkins, Iowa City, Ia.
Frank Dumond, Rochester, N. Y.
Joseph F. Monaghan, Rochester, N. Y.
Richard S. Grotte, Omaha.
Philip Mueller, Decatur, Ill.
Mrs. Philip Mueller, Decatur, Ill.
James C. Dahlman, Omaha.
W. H. Lloyd, Chicago.
Mrs. H. W. McVea, Omaha.
Mrs. T. C. Rich, Omaha.
G. L. Wallace, Omaha.
Mrs. D. P. Clifton, Omaha.
D. P. Clifton, Omaha.
T. C. Rich, Omaha.
W. G. Cook, Trenton, N. J.
A. W. Vierling, Omaha.
R. B. Orr, Kansas City.
R. W. Connell, M. D., Omaha.
Herbert Gardner, Lincoln, Neb.
Charles Rice, Omaha.
D. W. Dudgeon, Omaha.
Robert N. Wolfe, Omaha.
D. J. O'Brien, Omaha.
Henry H. Kruger, Omaha.
J. W. Robbins, Omaha.
T. J. Lynch, Omaha.
G. C. Impey, Omaha.
Mrs. Houghton, Minneapolis.
Geo. A. Hill, Omaha.
E. Willard, Kokomo, Ind.
A. M. Maddock, Jr., Trenton.
C. F. Huber, Omaha.
S. C. Crawford, Chicago.
Jno. H. Owens, Racine, Wis.
Jno. P. O'Brien, Pittsburg.
Andrew Rosewater, C. E., Omaha.
H. Wing, Omaha.

Harry W. McVea, of Omaha, who did so much to make the meeting a success, called the society to order and introduced Hon. James C. Dahlman, the mayor of Omaha, who made a cordial and informal address of welcome.

President Quinn acknowledged in a brief but grateful address the Mayor's greeting.

The society plunged into business at once, the appointment of an auditing committee being the first business. President Quinn appointed Frank W. O'Neill, of Joliet, Ill., Henry B. Davis, of Washington, D. C., and A. C. Shaver, of Pasadena, Cal.

Report of Test Committee.

Henry B. Davis, of Washington, D. C., chairman of the committee on "Tests," reported as follows:

"Mr. President and Fellow Members: I have the honor to submit the following report as Chairman of the Test Committee.

"Considerable progress has been made toward having various tests made on non-siphon traps, for evaporation, cleanliness, non-siphonable qualities, both normal and abnormal. Also the safe distance a plumbing fixture and trap can be placed from main vent stack, without back venting and various other tests of vital interest to Sanitary Science, this Society and the general public.

"While the tests have not been started, I have had several interviews with the Professor who has been assigned to make the tests and have turned over to him considerable data, drawings, sketches, books and pamphlets, etc., concerning tests made by others.

"It is a rule of the Bureau, that before any assistant will start any test, he is required to obtain all information on any subject that is possible, so as to be perfectly familiar with the work in hand besides make drawings for the installation of the work, showing the fixtures, traps, pressure and vacuum gauges, etc.

"I was only recently informed that he was ready to proceed with the tests, but the time was too short to give the subject proper attention, before this meeting, and I deemed it proper to wait until a full report could be made, rather than make a partial one.

"The tests when started will cover a considerable period of time on account of the accurate and scientific manner in which each detail of the test will be conducted; I must therefore ask for the kind indulgence of the officers and members and promise to have for the next meeting, authentic results, that cannot be questioned. This promise is made with the hope that the present committee will be reappointed, by the President, as the committee is well selected and have been of material assistance to me in offering valuable suggestions and drawings which will greatly facilitate making the tests.

"Many manufacturers have sent me their non-siphon traps for testing purposes and others are holding their traps awaiting my notification to them to ship same. I have received the assurance of several master plumbers of this city, that they will furnish me with the necessary pipe and fittings, and loan me fixtures to aid in making the tests. Therefore, everything is in readiness to immediately proceed with the work, but I must apologize for the delay, which has not been entirely within my control and as a great amount of preliminary work has been done, there is now no reason why actual work of testing should not be given prompt attention.

"I should like to see the scope of the committee enlarged so as to permit it to formulate and suggest the adoption by this Society at the next meeting, a Standard Regulation. This is important work, for in almost every issue of journals devoted to plumbing, notice appears that certain cities are considering the adoption of a Plumbing Code, and any advanced ideas in construction or practices that may be adopted by this Society, should be sent any interested person or persons.

I therefore suggest this committee be designated as Test and Standard Regulation Committee.

"Yours very respectfully,

"Henry B. Davis, Chairman, A. R. McGonegal, Clifford R. Bradbury, Edward F. Kane, J. J. Cosgrove, Thomas N. Thomson."

Certificates of Membership.

Henry B. Davis, of Washington, reported having engrossed twenty-seven certificates of membership, and that fully twice as many would be required during the coming year.

Publication Committee.

Jno. K. Allen, chairman of the committee on "Publication" reported that Volume III. of the Proceedings of the Society, would be ready for transmission to the members in about two weeks.

Henry B. Davis, Inspector of Plumbing, Washington, D. C.
Re-elected Director of the American Society of Inspectors of Plumbing and Sanitary Engineers.

Committee on Presentation.

Messrs. Jno. K. Allen and Harry W. McVea, committee to purchase a testimonial to ex-President Henry B. Davis, reported that a silver tea service had been sent immediately after the close of the last session. Mr. Davis, in person, thanked the society for the appreciated gift.

Legislation Committee.

Charles B. Ball, of Chicago, reported that but few legislatures had been in session during the last year, and that but little could be reported. The committee would present a map showing but fourteen states in which there was plumbing legislation in force.

Membership Committee.

C. S. McCosker, of Mobile, Ala., reported for the membership committee, that he had written six hundred letters and had received many encouraging replies.

The Society then adjourned for luncheon.

The members and attendants had a fine opportunity during the luncheon hour to inaugurate that most valuable feature of the society's meetings, interchange of experiences and extension of personal acquaintance.

AFTERNOON SESSION.

Upon calling the society to order, President Quinn called Vice-president Charles B. Ball to the chair to preside while he read his

Annual Address

"Gentlemen and Fellow members of the American Society of Inspectors of Plumbing and Sanitary Engineers, in opening this, our fourth annual convention, I extend to you my hearty greetings. It affords me great pleasure to note the steady growth of our Society, and, as one of its founders, I assure you that it is with keen gratification I have watched it grow from the few pioneers who blazed the way to a splendid organization whose membership embraces a majority of the Inspectors of the large cities of the United States and Canada, and has even extended to the far off Isthmus of Panama; and I feel assured that as the different cities begin to realize and appreciate the improvement in their sanitary conditions, as a result of the knowledge gained by their inspector, through his having been sent to our conventions, where he mingles with the representative plumbing inspectors, and where the interchange of ideas shows him how he can improve the sanitary condition of his home community, they will then be anxious to send a delegate to our future conventions.

"One of the chief obstacles in the way of the Inspector attending our conventions seems to be the lack of an appropriation of funds for that purpose. After numerous letters written by me at the request of various inspectors addressed to the Mayors or Presidents Board of Health, the usual reply was 'no funds'; but that if the Inspector will exert himself with the council they had no doubt that an appropriation would be passed to pay his expenses.

"It appears to me that if the Inspector would make the proper effort to impress upon the minds of his councilmen the importance of attending these conventions and the knowledge he will gain and that in the end, it is his city that reaps the benefit of the knowledge thus acquired, there would be a yearly appropriation made to defray expenses of this kind; as in this age of progress it is the general demand of citizens that their municipal government be conducted along strictly modern lines, and there should be no objections on their part to paying a man's traveling expenses when he does so to acquire these modern ideas in their interests.

"With your permission I would like to touch upon some few subjects which may be brought up and discussed at length before this convention adjourns, but in my paper I could not refrain from mentioning them.

Examining Boards.

"First and foremost, are the Examining Boards. I believe that it is the duty of every Inspector here to try and have legislation enacted by his proper body to create a board of examiners of plumbers, if they have none and to see that this board is constituted of practical plumbers and that the examinations are conducted along practical lines, and that the same and its details be made to avoid all catch questions and that all boards be made to recognize the apprentice or the boy and that they help him to obtain a knowledge of plumbing for we all know that the boy, if taught the business properly, will eventually become a competent plumber and a competent plumber makes a useful citizen, and the community profits by his knowledge of sanitation. The trade papers throughout the United States and Canada have my hearty commendation for the manner in which they write and dwell at length upon the subject of the installation of good plumbing and its benefits; and in places where there is no plumbing inspector to consult these papers are invaluable to the plumbers as an information bureau to guide them along the correct lines and to help them out of the many entanglements and in solving problems that may arise with them or their clients from time to time.

Durham and Mixed Systems.

"I have been called upon more during the last year to express my opinion relative to the 'Durham' and 'mixed' systems, than I have during all the previous years of my incumbency and I have investigated this matter thoroughly and will state for your information that after inspecting some of this 'Durham System' in our larger buildings installed some ten or fifteen years ago, I find that the stacks throughout these buildings have been entirely eaten away from electrolysis or other causes and I think it is time that this Society should take up this matter and investigate, as I have, and let the people know through the various trade papers, the results of their investigations. I, as a great many more of you, know the objections to the use of cast iron pipe in fire proof buildings is the expansion of the lead in the joints.

"On one of my recent inspection rounds, I engaged in conversation with a plumber who was repairing and replacing some of the wastes on the 'Durham System' in one of our buildings and he informed me that he would prefer caulking a dozen joints in bad places to replacing one waste of a 'Durham System.'

"In my estimation the subject of 'Cast Iron Stacks' should be taken up to determine if there is a chance for some improvement in the method of caulking joints that would stand expansion.

Anti-Siphon Traps.

"Another subject I wish to bring before you is the 'Anti-Siphon Trap.' Some of our leading inspectors and authorities throughout the country have lent their endorsement to these traps. I wish to state that after experimenting in my office, my opinion is, an ordinary drum trap properly installed will offer as much resistance against siphonage as any 'Anti-Siphon' trap on the market, and I believe that if it is absolutely necessary to use an anti-siphon trap the plumber can make and install a trap that will do as much service as some of the high priced, patented, anti-syphon traps, and while I realize that this Society does not wish to stop the wheels of progress by unloading a lead trap on the public, if they want a higher priced trap, still

I would like to see the cost of plumbing reduced to encourage more plumbing, thereby improving the sanitary conditions.

Cleanouts.

"Another subject is the Cleanout. Recently on numerous occasions it has been called to my attention, where the cleanout, installed with the best intentions had been removed by the handy man, the first time the sewer became blocked and never replaced, thereby allowing the sewer gas to pass up through the building, and I have no doubt that a great many of you have found the same thing to exist and I wish to say that I have overcome this condition in our municipal buildings by specifying that the last fixture on all runs be installed with 45% Els, so that the fixture can be removed and the connection used as cleanout and then you can rest assured that the fixture will be replaced and connection made tight to keep the same from leaking.

Flushing Valve Closets.

"I have been watching with interest from time to time, the progress of the flushing valve and a great many of them have been installed in my city and a number of them had to be removed as they did not work satisfactorily and every time I look at one, it reminds me of the time I started at the plumbing business nearly twenty years ago, when the old pan water closet was popular. In my estimation a great many of these so-called flushing valves are a resurrection of the old-time pan closet on a larger scale. I think it would be well if our Society would investigate these valves.

"I would like to talk more on various other subjects pertaining to plumbing, but I am aware of the fact that there is a number of well written papers to follow me and I do not wish to bore you, but I do wish to thank you all for the help you have given me in the past year and I wish to thank the officers of this Society and the chairmen of the different committees for their efforts in behalf of the organization and I hope the Society will select a president to succeed me that will serve this Society and the public as I have striven to do. I herewith submit to you for your approval, my annual report."

President Quinn's address was, upon motion of Jno. K. Allen, referred to the Board of Directors with instructions to report upon its recommendations.

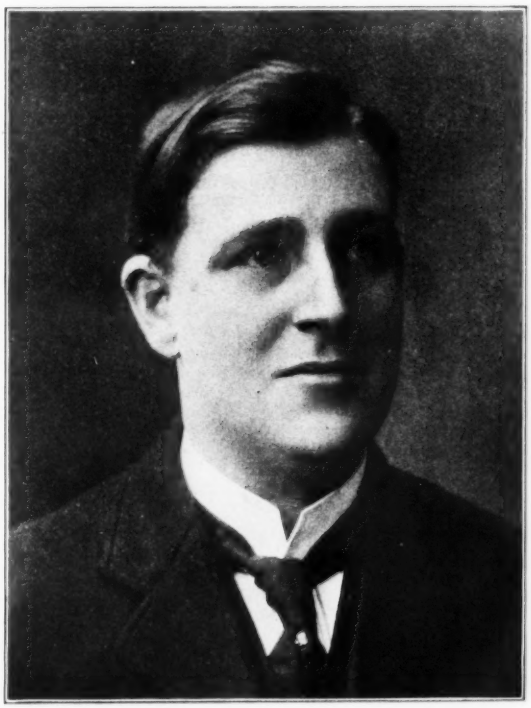
Co-operation with Master and Journeymen Plumbers.

President Quinn, before taking his seat, made the following motion:

"Mr. Chairman:—I move that this Society instruct the incoming president to appoint a committee of three and that the secretary be ordered to ask the National Association of Master Plumbers and the National Association of Journeymen Plumbers to appoint a like committee; that these committees be instructed by their respective organization to wait on the United States Congress and Senate as a joint committee, and seek to impress upon their minds how important it is that they secure the passage of an annual appropriation bill to defray the expenses of a test committee, comprising a representative of each organization to draw up suitable rules and regulations to be known as 'The National Plumbing Code.' This code to be mailed to anyone upon application who is interested in sanitary plumbing. Also to empower this committee to make tests of the various materials used in plumbing and ascertain the life of the different materials under different conditions."

President Quinn supported his motion as follows:

"I wish to bring to your attention the fact that the government spends thousands annually on agriculture and horticulture, the pure food law and veterinary surgery, and if the congressmen of the various districts know that you are interested in any of these subjects they will be glad to mail you whatever information you may desire, but not one dollar do they spend on sanitation which affects the health of the entire community.



Edward Quinn, Supervisor of Plumbing, St. Louis, Mo.
Retiring President of the American Society of Inspectors of Plumbing and Sanitary Engineers.

"I am fully aware of the fact that Congress could not compel the enforcement of this code on the different cities but it would enlighten a great many of our people as to what is the right kind of plumbing to install. In my own city the national government spends thousands of dollars annually testing coal and cement and I firmly believe that if we present to Congress this matter in the proper manner we can bring these tests about and we will then be in a position to know the materials we are using and there will be more facts and less guessing. The community at large will then know that this Society has tried to bring

about good sanitary conditions throughout the United States."

The motion was discussed by Messrs. W. G. Williamson, F. W. O'Neill, Philip Mueller and Henry B. Davis, and the motion prevailed.

Vice-President Ball then introduced Ralph W. Connell, Health Commissioner of Omaha, who read a paper on **"The City Plumbing Inspector in His Relation to the Health Office."**

This paper (as well as all other papers read at the Society's meeting) will be printed later in "Domestic Engineering."

Upon motion of Secretary McCosker a vote of thanks was extended to Dr. Connell.

The Plumbing Inspector and Civil Service.

Frank W. O'Neill, Inspector of Plumbing of Joliet, Ill., and member of the Society, read a paper on "The Plumbing Inspector and Civil Service."

Looking to Examinations.

Jno. K. Allen read the following resolutions:

Whereas, It is extremely important that the inspection of plumbing should be placed under the operation of the civil service, and

Whereas, In order that this may be done it is necessary that there shall be a body of men trained to occupy the inspectorships, therefore be it

Resolved, That the incoming Board of Directors be instructed to hold, during their term of office, an examination for persons qualified to act as plumbing inspectors, the certificate of this society to be given to such persons as successfully pass this examination.

Resolved, That due notice of the time and place of holding the examination be given in the trade and daily press, and that there shall be no fee attached to such examination, but that a fee of $5 shall be paid for the society's certificate.

Mr. Allen moved the resolutions be referred to the Board of Directors for consideration, with instructions to report its recommendation at this meeting.

Mr. Allen's resolution, looking as it did to an entirely new and somewhat radical course of action for the Society, caused a heated discussion, but his motion prevailed.

Plumbers' Examining Boards.

The topical discussion of "The Work of Plumbers' Examining Boards" was opened by President Quinn, who said that during the last year he had examined more than 1,400 applicants for plumber's certificates; that there had been a lack of co-operation from some master plumbers; that the examination of apprentices should be encouraged; that journeymen who failed of passing the examination are afterwards found working under certificates issued by master plumbers certifying the men to be apprentices; the real apprentice should be registered properly, and should be looked after by the examining board; there are too many catch questions asked of plumbers.

James G. Houghton, of Minneapolis, of the Board of Examining Plumbers, detailed the proposed plan to be followed out in that city.

Frank W. O'Neill, of Joliet, Ill., said in his town the examiners did not allow any cutting or rasping in wiping joints or the use of soil, which sometimes covers a multitude of sins.

John C. Alford, of Chicago, reported the operation of the Illinois plumbing examination law, and recommended a state board rather than local boards.

President Quinn said in St. Louis a man could come before the examining board every three months. His board passed men who reach a percentage of 65. The Boards of Examiners should give a man a perfectly fair trial, for he believed in helping all who honestly come up for examination.

Frank Dumond, of Rochester, N. Y., explained conditions in his city.

T. J. Farrell said in San Francisco the policemen were obliged to see that a permit must be secured for every job before the work can go on.

The discussion was carried on at great length and developed many points.

Upon the close of an interesting discussion the Society adjourned.

MONDAY EVENING.

In the city council chamber an interested and large audience gathered to listen to the papers on the evening programme.

Public Baths in School House Basements.

A paper by Reuben S. Bemis, of Providence, R. I., on this subject was read, in his absence, by W. G. Williamson, of Detroit.

Public Baths.

A paper on "Public Baths" was then read by Jno. K. Allen, of Chicago, illustrated by forty-five lantern slides of installations of baths in various cities of both hemispheres.

Civic Sanitation.

Frank K. Chew of New York, read an address on "Civic Sanitation," illustrated by about forty slides showing the varied activities of the city health department. Most of the slides had been loaned for exhibition to the Society by Dr. Thomas H. Darlington, health commissioner of New York, and a vote of thanks was, on motion of Henry B. Davis, of Washington, tendered him.

Plumbing Plans and Specifications.

A very useful paper on this subject was read by O. B. Craig, of Pittsburg, Pa.

Before adjournment some interesting moving pictures were shown by the lantern operator.

TUESDAY.

Morning Session.

Secretary-Treasurer's Report.

The first item of business was the reading of the report of the Secretary-Treasurer, C. S. McCosker, of Mobile, Ala. It was an interesting report showing an excellent amount of work done. The receipts were $415.02, expenditures, $198.33, and balance on hand $216.69. Twenty-nine copies of the proceedings had been sold during the year.

Upon motion of Frank W. O'Neill, of Joliet, Ill., a vote of thanks was extended to the Secretary-Treasurer, and he was ordered reimbursed for the expense of the preparation of his card-index system.

Upon motion of C. S. McCosker a committee consisting of Jno. K. Allen, W. H. Jennish and O. B. Craig

was appointed to submit resolutions upon the death of C. S. Magawan, a member, late of Iowa City, Ia.

Plumbing Design.

The general subject of the session was "Plumbing Design," the first paper being on **"Soil and Vent Pipe Design"** by Frank W. Tower, of Springfield, Mass., the paper being read—in the author's absence—by Charles B. Ball, of Chicago. This paper did not offer a new system of venting plumbing systems, but presented some ideas which were novel. The paper was discussed quite generally, Philip Mueller, of Decatur, Ill., sketching some peculiar conditions found in an installation in their factory.

The next paper was on **"Three-inch Soil Pipe Stacks,"** by Charles M. McHugh, of Cedar Rapids, Ia., objecting to the use of soil pipe of that size.

Vice-president Ball took the chair, and called on Henry B. Davis, of Washington, D. C., who opened the discussion.

Soil Pipe and Fittings.

C. R. Schmidt, vice-president of the Central Foundry Co., resident at Baltimore, read a most valuable paper on **"Soil Pipe and Fittings."** The paper included a set of proposed regulations looking to standardization of soil pipe and fittings, and Mr. Putts, of Baltimore, moved that these regulations be referred to the Board of Directors, with a request that they report to this meeting as to the advisability of the Society giving its endorsement to these regulations.

Jno. C. Alford moved as a substitute, that this Society adopt these regulations and recommend to the manufacturers that they standardize soil pipe and fittings.

Mr. Rumsey, of St. Louis, moved to lay the proposed action on the table, but his motion was overwhelmingly defeated.

In order to bring together all the papers on Standardization, it was voted that the paper on **"A Standard of Material,"** by E. Willard, of Kokomo, Ind., be read at this time.

Mr. Willard then read his paper, which recommended the appointment of a committee to co-operate with committees from the manufacturers and jobbers of plumbing goods and the American Institute of Architects to bring about a standardization of plumbing goods.

Mr. Alford then read a motion as follows:

"Resolved, It is the sense of the Society in annual meeting that the time is opportune for the adoption of Standards for plumbing material and that a committee be appointed with power to act subject to the Board of Directors with instruction to give its immediate attention to the soil pipe and fitting standards recommended and to consult other interested bodies in order that positive action may be reached expeditiously."

This resolution was unanimously passed, after which a flash-light photograph was taken in the convention hall, it being too cold out-of-doors for the members to expose themselves to the Nebraska blizzard which was raging.

Adjournment was then taken for luncheon.

TUESDAY AFTERNOON.

From "House to Sewer."

The first address was that by Andrew Rosewater, C. E., city engineer of Omaha, entitled **"From House to Sewer."** It was partly written and partly verbal, but was interesting in the extreme, covering as it did, the crystallized experience of a rich lifetime spent in engineering work.

Election of Members.

The following new members were elected:

Active.

Schuyler V. V. Hoffman, Sanitary Engineer, Philadelphia.

William Davis, Plumbing Inspector, Denver, Colo.

Chas. S. McCosker, Inspector of Plumbing, Mobile, Ala.
Re-elected Secretary-Treasurer of the American Society of Inspectors of Plumbing and Sanitary Engineers.

J. Maitland, Plumbing Inspector, Lorain, O.

John W. Farrell, Chief Inspector of Plumbing, Salt Lake City, Utah.

Conrad Christian Sofleiss, Sanitary Inspector, New York City.

Fred W. Cloutier, Plumbing Inspector, Minneapolis, Minn.

Walter Potter, Plumbing Inspector, Mobile, Ala.
George Klaus, Inspector of Water, Sewerage and Plumbing, Galveston, Texas.
J. W. Watson, Chief Plumbing Inspector, Des Moines, Ia.
Albert Alfred Bennett, Plumbing Inspector, Los Angeles, Cal.
Herbert Gardner, Inspector of Plumbing, Lincoln, Neb.
Bert J. Chipman, Assistant Inspector of Plumbing, Lincoln, Neb.
Thos. J. Farrell, Plumbing Inspector, San Francisco, Cal.
Charles S. Webster, Assistant Inspector of Plumbing, Buffalo, N. Y.
Frank A. Hassel, Inspector of Plumbing, Burlington, Ia.
Ernest L. Coffman, Chief Inspector of Plumbing, Canton, O.
Henry S. Winterhalter, Sanitary Inspector, Bayonne, N. J.
Wm. H. White, Inspector of Plumbing, Buffalo, N. Y.
Paul W. Meeker, Chief Plumbing Inspector, East St. Louis, Ill.
William A. Wheater, Supervisor of Plumbing, Boston, Mass.
Jno. P. Freeman, Plumbing Inspector, St. Joseph, Mo.
John C. Alford, Supervising Inspector, Chicago.
George M. Tait, Sycamore, Ill.
John E. Mullane, Plumbing Inspector, Minneapolis, Minn.
Alvin P. Peterson, Plumbing and Water Inspector, Moline, Ill.
Eugene Willard, Sanitary Engineer, Detroit.
Charles I. Putts, Jr., Inspector of Plumbing, Baltimore, Md.
James Ross Walker, Assistant Plumbing Inspector, Waterbury, Conn.
Joseph C. Watkins, Assitant City Engineer and Plumbing Inspector, Iowa City, Ia.
John E. Harbison, Schenectady.
John A. Owens, Racine.

Associate Members.

William H. Lloyd, Sanitary Engineer, Chicago.
James Teahen, W. J. Scully Mfg. Co., Detroit.
Horace S. Rumsey, Vice-president and General Manager L. M. Rumsey Mfg. Co., St. Louis.
J. H. Swartz, Omaha, Neb.
Harry R. Riley, Omaha, Neb.
F. B. Holbrook, Omaha, Neb.
Philip Mueller, H. Mueller Mfg. Co., Decatur, Ill.
John J. Sheehan, Cleveland, O.
James G. Houghton, Inspector of Plumbing, Minneapolis, Minn.
Charles R. Schmidt, Vice-president Central Foundry Co., Baltimore, Md.
A. M. Maddock, Trenton.
John D. Blake, Rock Island.

Presentation by Secretary McCosker.

The Secretary, desirous of keeping a history of the Society, had engrossed a series of sheets, briefly showing the work of the Society, presented it to the Society, and it was accepted by a standing vote.

The paper was discussed by Mr. Mueller, Mr. Dorsey, Mr. Herrick and President Quinn, all of whom made a defence of the use of lead pipe.

Institutional Plumbing.

A paper was read on **"Plumbing Systems for Schools, Hospitals, Prisons, etc.,"** by Frank Dumond, of Rochester, N. Y., taking up the circuit venting system.

William G. Williamson, of Detroit, read a paper on **"Plumbing for Schools,"** treating particularly of fixtures. This paper was discussed by Mr. Shaver, who explained his idea of a modern, ideal toilet room for schools.

A paper on **"School Plumbing,"** by Thomas J. Claffy, of Chicago, was read in the author's absence by John C. Alford.

A paper on **"Prison Plumbing"** was read by Harry W. McVea, of Omaha.

Jno. K. Allen, of Chicago, read the following:

Resolutions Concerning Death of C. S. Magowan.

The committee appointed to present resolutions upon the death of Professor C. S. Magowan, of Iowa City, Ia., reported as follows:

Resolved, That this Society learns with deep regret of the death of a charter member, Professor C. S. Magowan, of Iowa City, Ia., and desires publicly to record its appreciation of the value of his service not only to his own city and state and to this Society, but to the cause of sanitary science generally. He organized the course of sanitary and municipal engineering in the State University of Iowa and occupied its chair of instruction, this department of instruction being among the first, and, in the West perhaps the first of its kind established. As city engineer of Iowa City he designed and supervised its sewer system and drew up its sanitary ordinances and regulations.

Resolved, That we consider ourselves fortunate that this Society had a part in his active and useful life.

JNO. K. ALLEN,
W. H. JENNISH,
O. B. CRAIG.

Appreciation of Work of Master Plumbers.

Charles B. Ball, of Chicago, offered the following:

Resolved, That in making the investigation into the character of the air of house drains, the Sanitary Committee of the National Association of Master Plumbers is entitled to the thanks of all who are interested in sanitary science, and that it is the earnest hope of this Society that the most valuable report of the committee may soon be published, and its findings be made available to other bodies interested in sanitation.

The report was on motion of Frank K. Chew, seconded by Jno. K. Allen, passed and a copy ordered sent to the National Association of Master Plumbers.

A paper by Edw. H. Donahoe, of Peoria, on **"Some Practical Experiences with School House Plumbing,"** was read in the author's absence by Frank W. O'Neill, of Joliet.

In connection with the discussion President Quinn and Mr. Williamson told of the rejection of latrines in St. Louis and Detroit, in the latter city not even in manufacturing buildings unless the latrine is installed in a separate building.

A paper by George W. A. Butler, of Erie, Pa., on **"Toilet Rooms in Schools,"** was read in the author's absence by Robt. H. Ellithorpe, of Fresno, Cal.

Lead vs. Iron Pipe.

John C. Alford, of Chicago, read a paper on **"Lead vs. Iron under Bathroom Floors,"** recommending iron pipe.

A discussion on privy vaults and crock drains closed the afternoon session.

TUESDAY EVENING SESSION.

In the Hotel Rome meeting hall the lantern screen had been erected and a joint meeting with the journeymen plumbers of Omaha was held, at which the general subject of **"Plumbing Design"** was taken up, the papers being illustrated by the stereopticon and being as follows:

"Recent Development of Water-Closet Design" by W. H. Lloyd, of Chicago.

"School Urinals as Constructed in Washington, D. C.," by Harry B. Davis, of Washington.

"Plumbing Design" by Charles B. Ball, of Chicago.

"House Sewers and Drains," by Herbert F. Shade, of Victoria, B. C.

There followed a general topical discussion which was led by W. H. Jennish, of Waterloo, Ia.

WEDNESDAY.

Morning Session.

Frank W. O'Neill, of Joliet, Ill., moved, immediately upon calling to order by President Quinn, that a nominating committee of five should be appointed to suggest names for officers for 1909-1910. The motion was seconded and prevailed.

Automobile Drainage.

President Quinn brought up the question of requiring automobile drainage traps in garages. This interesting subject was discussed by Messrs. Williamson, Carver, Stolz, Davis, Dumond, Shaver, Putts and Mueller.

Nominating Committee.

President Quinn announced the following committee on nomination:

William G. Williamson, Detroit, Mich.; O. B. Craig, Pittsburg, Pa.; Chas. I. Putts, Baltimore, Md., A. C. Shaver, Pasadena, Cal.; W. E. Jennish, Waterloo, Ia.

Cess-pool Dangers.

Burton J. Ashley, C. E., of Chicago, read a paper on "The Cess-pool and its Dangers."

Water Waste.

Harry B. Davis, of Washington, read a paper on "Water-Waste." The paper was discussed by Messrs. Stolz, Feaster, McCosker.

Sewage Disposal.

Robert Ellithorpe, of Fresno, Cal., read a paper on "Sewage Disposal in Fresno, Cal.," and the two papers were discussed by Mr. Freemen, of St. Joseph, Mo., and others.

Election of Officers.

The nominating committee reported, recommending the following nominations, and the nominees were unanimously elected:

President: **Charles B. Ball,** of Chicago.

First vice-president: **A. C. Shaver,** of Pasadena, Cal.

Second vice-president: **F. W. O'Neill,** Joliet, Ill.

Secretary-Treasurer: **C. S. McCosker,** Mobile, Ala. (Re-elected.)

Board of Directors: **Henry B. Davis,** Washington, D. C.; **Harry W. McVea,**: Omaha, Neb.; **I. R. Carver,** Pittsburg, Pa.

AFTERNOON.

The first action was a motion by C. M. McHugh of Cedar Rapids, Ia., that the Board of Directors should submit an amendment to the constitution making it possible to elect officers directly from the floor, and, this motion being seconded, it prevailed.

Sanitation at the Canal.

A paper by C. L. Stockelberg, of Culebra, Canal Zone, on "Sanitation on the Panama Canal Work," was read in the author's absence by Frank K. Chew. A rising vote of appreciation was taken for Mr. Stockelberg's work as plumbing inspector on the Canal Zone.

A paper on **"Roof Flashings"** by Francis H. Wright, C. E., of Chicago, was thereupon read.

A. C. Shaver, Inspector of Plumbing, Pasadena, Cal.
Elected First Vice-President of the American Society of Inspectors of Plumbing and Sanitary Engineers.

The paper on **"House Sewers and Drains"** by Herbert F. Shade, of Victoria, B. C., was to have been read Monday evening and accompanied by lantern slides, but as these did not arrive the paper had to be read without them.

Three papers, submitted by the programme committee were received with thanks and ordered printed in the proceedings, as the time at the disposal of Society was exhausted; the papers are:

"Soil, Waste and Vent Pipe Construction," by William Hey, of Portland, Ore.

"Methods of Fastening a Roof Flange about a Soil or Vent Pipe," by James B. Walker, Waterbury, Conn.

"Should all Traps with Concealed Partitions be Ruled out by Ordinance," by James M. Teahen, of Detroit.

Recommendations.

The Board of Directors recommended that Mr. Allen's resolution looking to the examination by the Board of Directors of persons qualified to act as plumbing inspectors, be deferred. The recommendation prevailed.

F. W. O'Neill, of Joliet, Ill., moved that in future meetings manufactured products be excluded from the convention room, be provided with a room which shall be locked during sessions.

Place of Meeting.

Invitations for the 1910 meeting were read from Milwaukee, Fresno, Baltimore, Detroit and Trenton, and the city of Trenton was selected.

Harry W. McVea, Inspector of Plumbing, Omaha, Neb.
Re-elected Director of the American Society of Inspectors of Plumbing and Sanitary Engineers.

Resolutions of Thanks.

John C. Alford, of Chicago, moved resolutions of thanks to the master and journeymen plumbers of Omaha, for entertainment and especially to Harry W. McVea, for the work he did to make the meeting successful.

Committees Appointed.

President Ball announced the following committees to serve during the year:

Test Committee—Henry B. Davis, Chairman, Washington, D. C., A. R. McGonegal, Washington, D. C., Clifford R. Bradbury, Washington, D. C., Edw. F. Kane, Wilmington, Del., J. J. Cosgrove, Philadelphia, Pa., Thomas M. Thompson, Scranton, Pa.

Publication Committee—Jno. K. Allen, Chicago, Ill., Jno. C. Alford, Chicago, Ill., W. H. Jennish, Waterloo, Ia.

Standardization Committee—Wm. G. Williamson, Jno. K. Allen, Edward Quinn, St. Louis.

The Banquet.

The Master Plumbers of Omaha tendered a banquet to the Society Wednesday evening, at Hanson's Cafe, a celebrated restaurant, and about ninety plates were laid. I regret that I had to leave Omaha before the banquet, but I am sure the occasion was a notable one. Frank K. Chew, Editor of the "Metal Worker," New York City, acted as toastmaster; Hon. James C. Dahlman spoke of the hospitality which Omaha had extended to the Society; Hon. R. J. Dunn, City Attorney, spoke at length of the need of the city of Omaha for public comfort stations. Other speakers were Henry B. Davis, who receives credit on all sides as the organizer of the Society; Philip Mueller of Decatur, Ill., a manufacturer who is constantly endeavoring to improve the standard of his goods; Harry W. McVea, Plumbing Inspector of Omaha, who certainly deserves the thanks of every member of the Society for his efforts to make the meeting a success. Mr. McKinly, a master plumber of Omaha, and F. W. O'Neill, the forceful Inspector of Plumbing of Joliet, Ill.

Notes.

The papers read at this meeting of the Society were so interesting and valuable that they will be published in "Domestic Engineering" as rapidly as our space will permit.

The H. Mueller Mfg. Co., of Decatur, Ill., showed some of their newer specialties, Philip Mueller and Murray F. Kirkwood being in charge.

The Trenton Potteries Co., of Trenton, N. J., was represented by W. G. Cook who gave away souvenirs and accompanied the gift with a boost for Trenton as the next place of meeting.

F. Kimche, of Detroit, the man "who makes 'em," showed a new fitting including a floor flange, vent tap, air chamber, waste taps, bath tap, lavatory trap, sanitary tee and elbow,—eight pieces,—in one casting. It attracted much attention from the visitors.

A. M. Maddock, of Thomas Maddock's Sons Co., of Trenton, joined the forces of Trenton rooters on the second day of the convention. The fight for the next convention city was a pretty one. Messrs. Williamson and Kimche worked for Detroit, the place where it is a delight to live, and Geo. R. Stolz worked hard for that bright spot, Milwaukee.

The National Lead Company, at considerable expense, and to the great enjoyment of the members, exhibited a beautiful specimen of Roman lead pipe, more than 1,800 years old, found in July, 1907, in excavating for a sub-cellar under the Palace Hotel in Rome. The pipe bore an inscription of which this is a translation: "Manufacture of the Emperor Cæsar Augustus Vespasianus under the charge of Callistus, freedman of the Emperor, manager." The crown enjoyed a monopoly of the sale of water, and, to control its distribution, manufactured the lead pipes in which it was distributed. Callistus, a Greek, who had been a slave, but had been freed by his royal master, was the superintendent of the works in which the pipe was made.

Perhaps the most striking fact about this meeting was the representative character of the attendance. Three inspectors from California, an inspector from Texas, two from Minnesota, and several from the

Atlantic seaboard, showed the widespread interest inspired by the Society. That it is well started upon a long and useful history is shown by a programme of great fullness and directness of purpose.

The Sanitary Roof Jacket Co., of Minneapolis, exhibited the roof flashing and soil pipe jacket invented by H. P. Wallace.

An interesting exhibit was made by the Federal Huber Company, in the jetector principle as applied to a wall outlet water closet.

John D. Blake, of Rock Island, Ill., represented the Blake cleanout and drum-trap cover.

H. Mueller Mfg. Co., of Decatur, Ill., presented each visitor a useful leather bill book.

L. T. Foreman, of Omaha, Neb., called attention of visitors to his swinging hose bracket.

M. Conray, of St. Paul., Minn., received a telegram Wednesday morning announcing the passing away of his father.

Mr. and Mrs. P. J. Madden, of Chicago, went on to the Pacific Coast.

The Local Union of Journeymen Plumbers of Omaha, gave each visitor a neat souvenir pencil.

On Thursday a special car took the party to Omaha's celebrated waterworks.

The wholesale houses were "at home" to the visitors on Thursday. **Jno. K. Allen.**

Wholesale Plumbing

The Leighton Supply Company, of Fort Dodge, Iowa, has been incorporated with a capital of $125,000, of which $75,000 has been paid in, to continue the plumbing, heating and mill supply business of Leighton Bros. in that city. The officers of the new company are: George Schnurr, president; A. C. Heath, vice-president; E. I. Leighton, secretary-treasurer and general manager. The firm of Leighton Bros. started in business in a small way in 1895 and has built up a profitable business by careful management, necessitating the formation of a stock company to handle the increasing business. L. L. Leighton, the senior member of the old firm will retain his interest in the new company but will not take an active part in the business as he intends to go west next spring to enjoy a well earned rest.

Grand Rapids Supply Company, of Grand Rapids, Mich., has been incorporated with a capital of $60,000 to deal in plumbing, heating and mill supplies. The officers of the company are: R. B. Kellogg, president; Chas. J. Davis, vice-president; B. B. Luten, secretary and treasurer. This company is a continuation of the heating and mill supply business which has been carried on under the same name since 1901 as a copartnership composed of the officers of the company. The business was started that year in a single store on Pearl street, where it remained until 1904, when it was found necessary to secure larger quarters, and these were found at the present location, 4-6 Pearl street. In addition to this space it later became necessary to occupy additional space at 91 Campau street and also in the old plant of the Michigan Iron Works. As the leases on these quarters expire this spring it was deemed desirable to build a permanent home for the well-established business. The officers of the company decided on a plot of land on the east side of Ellsworth avenue between Island and Oakes streets. On this site the company has already commenced the erection of a business block, 100x100 feet, at the rear of which it will have a sidetrack from the Pere Marquette Railroad, so that all cars can be unloaded directly into the building. The company also intends to erect a pipe warehouse on the lot adjoining its new business block.

Wholesale Heating

Herbert Boiler Company, of Chicago, announces the removal of its office in Milwaukee, Wis., from 315 Fourth street to 811 Majestic building.

Steel Products Association is the name of a new organization which was formed at a meeting of users of steel for the manufacture of boilers, tanks, and structural and bridge iron work, held at the Auditorium hotel in Chicago, Tuesday, January 26. The purpose of the new association is mutual and proper protection from steel mills and manufacturers' agents. The meeting was well attended by representatives of the lines covered by the new organization, from the territory west of Ohio, and all those present joined the association. Letters were received from many manufacturers, unable to be present, endorsing the movement and expressing a desire to join it. The officers of the association are: President, Jos. F. Cody, of Jas. Cody & Sons, Peoria, Ill.; first vice-president, Horace E. Horton, of the Chicago Bridge & Iron Works, Chicago; second vice-president, Chas. J. Wangler, of Jos. F. Wangler Boiler & Structural Iron Works, St. Louis; treasurer, E. W. Sedgwick, of the S. Wilks Mfg. Co., Chicago; secretary, Paul Blatchford, 1524 Tribune building, Chicago; assistant secretary, Geo. H. Tompkins, Chicago. Executive committee: The above named officers and W. L. Kroeschell, of Kroeschell Bros. Co., Chicago; Chas. T. Kingston, of John Brennan & Company, Detroit; and John A. McCann, of the Joliet Bridge & Iron Company, of Joliet, Ill. A meeting for the adoption of a constitution and by-laws will be held in the near future.

Association News

Troy Master Plumbers Enjoy Annual Banquet.

Troy, N. Y.—The Master Plumbers' Association of this city and vicinity held its annual meeting and election of officers on Wednesday evening, January 27, and subsequently enjoyed a banquet at Hotel Benedix, which was attended by a very large membership and many guests.

The officers elected for the year are: President, Charles Wills; vice president, E. J. Murphy; secretary, William F. Quinn; treasurer, Martin Mulligan; board of trustees, Charles Wills, E. J. Murphy, Edward Lee and William F. Quinn.

The banquet was made the occasion of many happy speeches, in which the history of the association and the progress of the trade were dwelt upon, and the amicable relations existing between the master plumbers, and the journeymen plumbers was referred to.

The retiring president of the association, John F. Knaupp, presided and announced expressions of regret

from Mayor Elias P. Mann, Commissioner of Public Safety, Francis N. Mann and Health Officer Dr. C. E. Nichols, who were unable to be present in response to invitations.

Vocal and instrumental music, stories and recitations added to the pleasure of the occasion.

Among the principal speakers were the newly elected officers, Robert Barrett, president of the Journeyman Plumbers' local union; John H. Mitchell, city inspector of plumbing; William H. Barnes, one of the veterans in the business; Battalion Fire Marshal William Bailey, Jr., Henry Calhoun, James P. Howard, James Kennedy and Thomas J. O'Sullivan.

The evening will be long pleasantly recalled by all who were at the festivities.

Indianapolis, Ind.—W. W. Wilcox, State vice-president of the National Association of Master Plumbers, has just announced that the Indiana State Master Plumbers' Association will hold its thirteenth annual convention in the Elks Hall at Kokomo, Ind., on Tuesday and Wednesday, March 9 and 10. The Francis Hotel will be the headquarters of the convention.

Grafton, W. Va.—At the meeting of the Master Plumbers Association of this city held last week officers were elected for the ensuing year as follows: President, George C. DeWoody; vice president, E. H. Hostler; secretary-treasurer, C. O. Newlon. E. H. Hostler and A. E. Jackson were elected as representatives, and George C. DeWoody and Job Jones as alternates, to the convention of the State Association which will be held in Clarksburg next week.

CONVENTION DATES.

February 15, 1909.—Annual convention of the **West Virginia State Association of Master Plumbers,** at Clarksburg, W. Va.

February 16 and 17, 1909.—Eighteenth annual convention of the Ohio State Association of Master Plumbers, at Armory Hall, Springfield, O. Headquarters at the Arcade Hotel.

February 17, 1909.—Regular meeting of the **Eastern Supply Association,** at the Hotel Astor, New York City.

February 22, 23, 24 and 25, 1909.—Third Congress of the **American School Hygiene Association,** at Chicago.

February 24, 1909.—Regular meeting of the **Central Supply Association,** at the Victoria hotel, corner Michigan avenue and Van Buren street, Chicago.

March 8 and 9, 1909—Annual convention of the Kansas State Association of Master Plumbers, at Kansas City, Kans. Headquarters at the Grand hotel.

March 9 and 10, 1909.—Annual convention of the **New York State Association of Master Plumbers** at Schenectady.

March 9-10, 1909.—Thirteenth annual convention of the **Indiana State Master Plumbers' Association** at Kokomo, Ind. Headquarters at the Francis Hotel.

May 18-19, 1909.—The fifteenth annual convention of the **Pennsylvania State Association of Master Plumbers,** at Wilkes-Barre.

Wells, Me.—Eddie M. Perkins, plumber, has filed a petition in bankruptcy. His liabilities exceed his assets by $450.

Personal

Chas. A. Blaney, of the Wheeler-Blaney Company of Kalamazo, Mich., was in Chicago this week and called on friends in the trade.

J. C. Pearson, manager of the Brock Wrench Company, of 18 Dey street, New York City, spent part of the week in Chicago calling on the trade.

Geo. W. Campbell, secretary of the Campbell Mfg. Co., of Gadsden, Ala., was in Chicago this week and called on some of his many friends in the trade.

Chas. H. Hill, manager of the Phillips Flushing Tank Company, 66 Batterymarch street, Boston, Mass., is at present on a business trip to the Pacific Coast.

A. C. Buchanan, of the Buchanan-Boughton Company, the leading plumbing and heating concern of Marshalltown, Iowa, was a visitor to the Chicago trade this week.

H. D. Day has succeeded J. H. Devine as manager of the boiler and plumbing goods department of the E. B. Badger & Sons Company at 63 Pitts street, Boston, Mass.

Frank I. Rose, representative of J. A. Rose, of gasket cutter fame, from Hastings, Neb., was in Chicago this week attending the automobile show and incidentally calling on a few of his friends in the trade.

J. P. Dugger, secretary of the Kewanee Boiler Company, of Kewanee, Ill., is at present visiting Havana, Cuba, and enjoying his daily constitutional walk on the "Prado Promenade." He is accompanied by his wife.

F. F. Hall, treasurer of the Union Supply Company, of Dundee, Ill., and prominently connected with other mercantile concerns of that thriving city, was in Chicago this week and called on some of his friends in the trade.

J. H. Devine, for several years past manager of the boiler and plumbing goods department of E. B. Badger & Sons Company, of Boston has severed his connection with that company to take up the practice of law, with offices at 6 Beacon street, Boston, having completed his course and been admitted to the bar while serving in the above capacity.

Public Comfort Stations

Chicago.—The Special Park Commission opened the Schoenhofen comfort station and park triangle at Eighteenth and Canal streets on Saturday afternoon, February 13. This is the first municipal comfort station and drinking fountain to be established in Chicago and comes very largely as the results of the work of the United Associations of the City of Chicago on Public Comfort Stations.

Milwaukee, Wis.—The first definite step in the direction of the establishment of **a comprehensive system of public comfort stations** in this city has been taken by Alderman William F. Kane, locally famous as the "bathhouse alderman," who projected the first municipal bathhouses in the city. Mr. Kane has introduced a resolution into the common council, calling on the Board of Public Works to prepare plans and specifications for a public comfort or convenience station to cost not to exceed $15,000. The location will be on or near Grand avenue bridge, the principal bridge in

Milwaukee, and joining the two leading streets, Wisconsin street and Grand avenue. The resolution was prepared for Alderman Kane by Dr. Gerhard A. Bading, commissioner of health. Both are leaders in promoting sanitation in Milwaukee. Dr. Bading has gained no little fame throughout the country as commissioner of health by his progressive ideas, which sometimes appear radical, but on being tried, are not found wanting. Civic organizations, medical societies and individuals are pushing the agitation for the station, and it will doubtless be erected within the next two or three months. **A recent issue of "Domestic Engineering," containing an able exposition of the value of public comfort stations, giving illustrations and methods, was used to exceptional advantage by the Milwaukee officials in preparing the resolutions, and will be a valuable aid to the board of public works in the preparation of plans for Milwaukee's first station.** The board of public works recently made a trip to Cleveland, O., to investigate a new station there, and valuable suggestions have been received from New York, Chicago and St. Louis.

Obituary

James M. Foster, who conducted a plumbing business at 134 Carroll avenue, Baltimore, Md., passed on at his home in that city on Friday morning, February 5, in his 55th year. Mr. Foster was born in Baltimore, a son of the late D. B. Foster, a pioneer master plumber of that city. He is survived by a widow and four children.

Robert I. Wilson, a retired master plumber, who formerly was in business for many years at Rensselaer and Greenbush, N. Y., passed on at his home in Rensselaer on Monday morning, February 1, in his 64th year. He was widely known in boating circles, being an enthusiastic member of several rowing clubs. He is survived by his wife and three daughters.

Pittsburg and Vicinity

Saltsburg, Pa.—John W. Shadle, of this city, has been awarded the heating contracts for several residences that are being built here this winter. Mr. Shade has also received the plumbing contracts for a number of high class residences being built here, and is very busy at the present time, all of his men being employed steadily.

Conneautville, Pa.—W. E. Reichel and Everett Ward have formed a co-partnership and have embarked in the plumbing and heating contracting and jobbing business here under the firm name of Reichel & Ward. Both are capable workmen, and have been engaged in these lines in this vicinity as employees of various plumbing and heating contractors.

Washington, Pa.—C. E. Houston has embarked in the plumbing and heating business here, and has opened a well equipped shop at 240 North Franklin street, where he will conduct a general business. He has had wide experience in this business, having learned his trade with J. T. Sunderland, of this place, and later was for a number of years in the employ of T. F. Burte and J. W. Minton & Company, both local plumbing and heating contracting concerns.

Tips on New Work

Knoxville, Tenn.—Plans are being prepared by Architect Chas. A. Hayes for a three-story brick building, 400x300 feet, steam heat, for the Tennessee Military Institute at Sweetwater.

New York, N. Y.—Plans for the proposed new Elks building now before the building committee, of which James D. McEntee, master plumber of 710 Columbus avenue, is a member, indicate that it will be one of the finest lodge buildings ever attempted. It will be twelve stories in height and located on Forty-third street, west of Sixth avenue. The cost for the land and construction will be approximately $1,000,000. The building will be fully equipped for club and hotel purposes, containing about 215 sleeping rooms, all with private baths, gymnasiums, plunge pools, Turkish and Russian baths and a lodge room with a seating capacity of about 1,800. Two balconies with boxes will run around three walls. The room can be utilized for balls, entertainments and theatricals. One floor will be entirely devoted to club room purposes, including a billiard room, library, ladies' reception room, etc. Public restaurant and grill rooms will be located on the main floor as well as hotel office accommodations.

Chicago, Ill.—This city is probably now on the eve of the greatest building era in its history, as there are in course of construction, or definitely planned not less than eighteen structures costing from $200,000 up to $5,000,000 each, or a total of $33,800,000, besides a large number of smaller buildings. Never before was there such a formidable array of construction work in prospect. The following is a list of the more notable buildings now being erected or planned in the business district which will make the year 1909 a memorable one in building circles in Chicago: New City Hall, to cost $5,000,000; Chicago & Northwestern depot, $4,000,000; H. C. Frick twenty-two-story hotel, Clark and Washington streets, $3,000,000; La Salle hotel, LaSalle and Madison streets, half finished, $3,000,000; Peoples Gas Light & Coke Company Building, Michigan avenue and Adams street, $3,000,000; Continental National Bank building, twenty stories, LaSalle and Adams street, $3,000,000; New Sherman House, Randolph and Clark streets, $2,000,000; twenty-story building, northeast corner State and Adams streets, as planned by the Dakota Building Company, $1,500,000; twenty-story building, LaSalle and Madison streets, planned by Lucius B. Otis, $1,500,000; Vendome Building, twenty stores, Michigan avenue and Van Buren street, planned by the L. J. McCormick estate, $1,500,000; Blackstone Hotel, Michigan avenue and Hubbard place, $1,500,000; twenty-story hotel, 110 and 114 Madison street, planned by J. K. Sebree, $1,000,000; twenty-story store and office building, Wabash avenue and Jackson boulevard, planned by Steger & Son Piano Company, $1,000,000; Municipal Court and Prison, Madison street and Chicago River, $1,000,000; Hart, Schaffner & Marx's new plant, Monroe and Franklin streets, $1,000,000; M. L. Rothschild building, 246 and 248 State street, $300,000; Cort Theater, 80 and 82 Dearborn street, $300,000; Chicago & Alton Railroad office building, $200,000.

New York News

Syracuse, N. Y.—Edward Joy has secured the contract at $2,500 for the generating, wiring, switchboard and engine for the New York Agricultural Experiment Station, located at Geneva, N. Y.

Buffalo, N. Y.—Dechert Brothers, of River street, have had their usual share of good work the past year and their list included installations of plumbing and heating systems in many new residences.

Buffalo, N. Y.—Daniel Lund, the veteran, still continues his semi-weekly pilgrimages into Cattaraugus county in pursuit of pheasants and black cats. During a recent sojourn into these parts he shot out the left eye of an owl and on account of it there is fear afloat that he will be heavily penalized.

New York, N. Y.—Thos. F. Gaynor Co., of 550 Columbus avenue, has the plumbing in several apartment houses as follows: One at 170th street and Brook avenue for the Leonard Construction Company, one at 183rd street and Amsterdam avenue for A. N. Donnellan and another for the Chelesa Realty Co., on 183rd street.

Olean, N. Y.—The Olean Plumbing, Heating and Lighting Co. has been awarded the contract for installing the plumbing, heating and lighting systems in the State School of Agriculture, Alfred, N. Y. The contract price is $9,000. This firm is also installing the plumbing, heating and lighting system in the new $50,000 club house being built for the Knights of Columbus in this city.

New York, N. Y.—Hotchkiss, Vail & Garrison Co., of 149 East Thirty-fifth street, New York, organized in December, 1908, and composed of E. W. Hotchkiss, formerly of Peck Bros. & Company, of New Haven, Conn., and New York; Mr. P. M. Garrison, also of Peck Bros. & Company, and Mr. Chas. N. Vail, formerly in the leather business. They have secured some very profitable business, in which is the contract for plumbing on the Nassau Hotel, Long Beach, Long Island, which has 110 bath rooms with all solid porcelain equipment. They also have the contract for the Tuberculosis Hospital, Blackwells Island, and several other large jobs. It is suggested that manufacturers send their catalogues to this new company.

Southern Notes

Charlottesville, Va.—R. L. Thomas & Co., are placing the plumbing in the new Y. M. C. A. building here.

Covington, Va.—F. M. Rogers is engaged with the installation of a plumbing system in a new residence here for J. C. Coleman.

Louisville, Ky.—John J. Bosemer, 1014 Third avenue, has filed a petition in bankruptcy in the United States Court. Liabilities given as $25,304.48 and assets at $13,968.32.

Clifton Forge, Va.—J. B. Scherer has engaged in the plumbing and heating business here and would be glad to receive catalogues and quotations from dealers in the above lines.

Wheeling, W. Va.—William Hare's Sons, of this city, have received the award of the contract for a fine residence that is being built here, which will contain several high class bath rooms.

Clifton Forge, Va.—The Allegheny Heating and Plumbing Company has succeeded to the business formerly run here under the name of the Virginia Plumbing & Heating Company.

Wheeling, W. Va.—Henry W. Brinkman has purchased the interest of R. V. Rose in the firm of Rose Plumbing Company, 3418 Market street, and will henceforth conduct the business at the old location.

Washington, D. C.—John Gagham & Company has recently received two enviable contracts, namely the plumbing for a new flat building on K street for Woodward & Parker and the plumbing in a new mansion for Mr. Lathrop.

Baltimore, Md.—R. P. Dobson & Co., of Saratoga and Paba streets, have two excellent contracts on their books, one for the steam heating installation in the new city jail and the other in the new Pratt Library, both in this city.

Lexington, Va.—Valley Heating, Plumbing and Tinning Company has been incorporated with a capital of $5,000, to conduct a plumbing business: Geo. R. Kirk, president; W. E. Quisenberry, vice-president; J. M. Quisenberry, secretary and treasurer.

Washington, D. C.—We are informed that Jno. O. Waters, promoter and contracting plumber of 917 E street, N. W., has plans under way for the establishment of a brewery in this city. This bit of startling news, however, is confidential.

Hinton, W. Va.—The Summer Plumbing, Heating and Roofing Company is the style of a new firm that has engaged in business here, under the management of M. A. Woodrum. They would appreciate receiving catalogues and descriptive matter from manufacturers and jobbers in their lines.

Charleston, W. Va.—The contracts for the plumbing in six residences that are being built in this city for R. G. Hubbard have been awarded to the West Virginia Plumbing & Heating Company, of this city. The same concern has also been awarded the contracts for the heating.

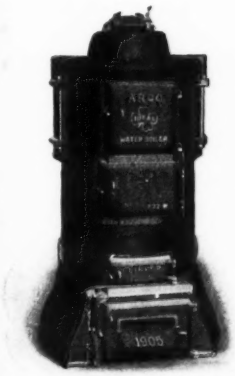
Staunton, Va.—The Augusta Plumbing & Heating Company has purchased ground, 108x95 feet in dimensions, along the Baltimore & Ohio tracks here and in the early spring will erect on it a solidly constructed brick structure. This will be utilized as a warehouse and shop. Their present quarters on Main street will be greatly altered and will be used for both show room and office purposes.

Baltimore, Md.—Crook-Kries & Co. have recently completed the installation of a vacuum heating system in the Y. M. C. A. building here, a system of steam heating in St. Rose's Industrial School at Washington D. C., an installation of two high pressure water tubular boilers in the Baltimore postoffice and court house; steam heating in the Maryland Institute for Feeble Minded at Owens Mills and a similar installation in the Maryland Tuberculosis Hospital. They are at present planning a gravity steam heating system in the Medico-Chi library building here.

E. De Forest Winslow.

Reliability.

"Can I depend on such an outfit?" asks the prospective buyer. "You can depend on an IDEAL-AMERICAN outfit twenty-four hours a day," replies the dealer. Reliability is a strong point with the houseowner. He wants a heating equipment that will work and be ready to work when needed.



IDEAL Arco Water Boiler, a type of "always reliable" Heating Equipment.

The design, material and workmanship which go to produce IDEAL Boilers and AMERICAN Radiators are always at an even point of excellence. There is no fluctuation between high grade and low grade. The only variation is in the constant improvement of the product from year to year.

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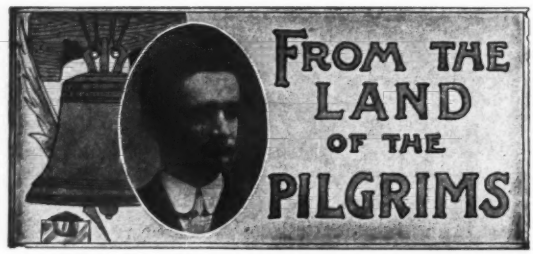


Boston, Mass.—John E. Hogan, a plumber, has been petitioned into bankruptcy.

Sanford, Me.—E. D. Bennett has the contract for the plumbing and heating in Orrin Whipple's new house.

Portsmouth, N. H.—The school committee has asked for new heating plants for the Haven and Spaulding schools and the matter is under consideration.

Marlboro, Mass.—Henry Parsons & Son have the contract for installing the heating plant in the new combination fire and police station, and have started the work.

Northfield, Mass.—Charles L. Johnson of Johnson & Smith has bought the interest of his partner in the plumbing business, and Mr. Smith has gone to his old home in Scotland.

Peterboro, N. H.—Willard M. Nichols of the plumbing firm of Nichols Brothers, who was confined to his house with blood poisoning for six weeks, is able to attend to business again.

Chelsea, Mass.—The Buckley Plumbing & Heating Co., have moved from 409 Broadway, where they have been located since 1896, to 114 Fifth street, where their quarters are far more commodious.

Lewiston, Me.—President Chase, acting for the trustees of Bates college is to petition the legislature for an appropriation of $15,000 for the construction of a central heating plant for the college.

Bristol, Conn.—The Shaffer-Marsh Co. has been awarded the contract for the plumbing and heating in connection with the new house which Nils E. Nystrom is building for himself on High street.

Chester, Mass.—H. B. Clark, a plumber and stove dealer with place of business in the Knowles' block, died on the afternoon of January 29. He was 58 years of age and leaves a widow and four children.

Woburn, Mass.—The committee on buildings has appealed to the board of public works to remedy defects in the heating and ventilating plant of the new high school which it is reported is proving very unsatisfactory.

Amherst, Mass.—The position with the Mutual Plumbing and Heating Company made vacant by the resignation recently of C. E. Wakefield has been filled by the selection of H. W. Eldridge and he entered upon his new duties this month.

Worcester, Mass.—William T. Toner & Co. are installing the plumbing in the house of the Hon. Charles G. Washburn at Narragansett Pier, R. I. The same firm also has the contract for similar work in connection with a new house which Arthur Curtiss James is having erected at Northampton.

Springfield, Mass.—The school board has asked the board of aldermen for a large appropriation for improvements in the school system, $5,000 of which is wanted for changing the heating system in the Manual Training School building.

Montpelier, Vt.—Plans will soon be completed for the new heating system in the county courthouse in accordance with the recent legislative action. The work will be in charge of Justice W. J. Clapp and Justice L. R. Wells and they are expected to ask for bids within a few weeks.

Bridgeport, Conn.—The following officers were elected by the Master Plumbers' Association at its annual meeting which was held on January 29: President, George Schofield; vice-president, J. Reilly, Jr.; secretary, W. B. Nichols; treasurer, S. A. Meeker; sergeant-at-arms, George Benson; trustee, F. C. Booth.

North Dighton, Mass.—The Cummings-White Plumbing Co. reports an unusual rush of orders for this time of year and they are compelled to work evenings to keep up with their orders. John Thornly also reports business as extremely good at his plumbing shop and he has all the work that he can attend to.

Malden, Mass.—The matter of the plumbing in the new high school building, which has proved unsatisfactory, was the subject of discussion at a conference between Building Inspector Connors, Plumbing Inspector Bullard and the high school commission a few days ago. The inspectors are determined that the work shall be done according to contract.

Lawrence, Mass.—Ira D. Blandin, formerly foreman of one of the departments of the Treat Hardware and Supply Co., and Samuel Beals, former manager of the E. E. Burnside Belting Co., have formed a partnership under the firm name of Blandin & Beals, and have purchased the belting branch of the Treat Hardware Co. and removed it to 313 Methuen street, Lawrence.

Chicopee, Mass.—The school committee has under consideration a plan for heating the new manual training school building by arrangement with the electric light commissioners, the heat to be supplied by pipe line from the electric plant. A committee consisting of Patrick E. Bowe, Frank J. Shea and Henry S. Martin has been named to confer with the electric people regarding the matter.

Bridgeport, Conn.—The contract for plumbing and heating a new dwelling which is being erected on Myrtle avenue for Mrs. Ida Bronson and Mrs. Bronson Hindle has been placed with F. & F. C. Booth. The house will be heated by hot water. The W. P. Kirk Co. will do the plumbing and install a hot air heater in the two-family house which Mrs. Delia Hall is building on Main street. John Donahue has the plumbing contract in connection with a two-family house which is being erected on South avenue for M. R. McFarland. E. J. Flannigan has the contract for plumbing and heating a two-family house which Hans Petersons is building in Fairfield.

Worcester, Mass.—Plumbing contracts have recently been placed as follows: With J. W. Jordan, new house at 194 Beacon street, owned by A. Beauvais. F. P. Gilbert, tenement house on Horner street, owned by

W. J. Hall. John J. McGrath, dwelling house at 12 Einhorn road, owned by H. C. Fisher. M. J. Maher, apartment house at 1279 Main street, owned by John H. O'Leary. C. A. Middlemas, tenement house at 42 Dix street, owned by L. A. Ely. Thomas J. McManus, tenement house at 6 Stoneland road, owned by Peter S. Gallagher; dwelling house at 5 Vesper street, owned by O'Connell Real Estate Co. Tucker & Rice, dwelling house at 84 Lake avenue, owned by E. D. Ward. John J. Lawler, dwelling house at 27 Ekman street, owned by J. Peterson. A. E. McDonald, tenement house, Blaine street, owned by John Woodington.

A. H. French

The Great Northwest

Newport, Wash.—Charles Chaney has purchased the plumbing business of F. W. Millard.

Clarkston, Wash.—R. B. Crouch has purchased F. J. McFarland's plumbing business.

Fort Atkinson, Wis.—Ernest Gebhardt, for several years past in the employ of Hager Bros. Co., has opened a plumbing shop in the Mack building.

Manitowoc, Wis.—John H. Phalen, plumber, has purchased additional property adjoining his present establishment and will use it for office purposes.

Manitowoc, Wis.—The Manitowoc county board of supervisors may decide to require bonds from all master plumbers who do work for the county.

Fond du Lac, Wis.—The board of education has asked for bids for the installation of a heating plant with two boilers in the new First Ward school building.

Ashland, Wis.—The firm of Upthegrove & McGinn has been recently organized here to conduct a plumbing and heating business at No. 113 Vaughn avenue. W. M. Upthegrove and Thomas McGinn constitute the firm.

Seattle, Wash.—The Eckart Plumbing and Heating Company, of this city, has filed articles of incorporation, with a capital of $25,000. The incorporators are Wm. F. Eckart, Claude H. Eckart and Gilbert Zindle, all of Seattle.

Fond du Lac, Wis.—D. Ahern & Son, of this place, have recently secured a bunch of good contracts, among which were the plumbing in six residences and the boarding house of the United States government at the Memominee Indian reservation at Neopit, Wis.; also the plumbing, heating and installation of the gas machine in the residence of John Phillips at Winneconne, Wis.

Pacific Coast

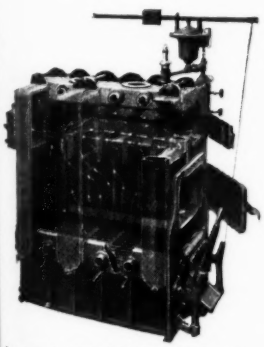
Hollywood, Cal.—O. D. Comer has just opened a new plumbing shop here.

Pendleton, Ore.—Bedlow & Miller have just opened a new plumbing establishment here.

Portland, Ore.—The plumbing firm of of Fox & Company has increased its capital stock to $10,000.

Sacramento, Cal.—High water caused considerable damage to many plumbing shops in towns in the Sacra-

About Those Divided Sections.



Improved Capitol Boiler showing construction, fire travel and waterways.

Perhaps you think we are always talking about those "Divided Sections." But then, it's worth repeating. Their advantages must appeal to you.

They are "light weight units" and can be handled with the smallest amount of labor.

Proper allowance is made for expansion and contraction, extending the life of the boiler to the maximum.

The "Quick Repair" feature of Capitol Boilers is founded on them. This means that in case of accident to the boiler, the sections can be removed and the boiler repaired temporarily. With no other boiler can this be so easily done.

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CHICAGO	34 Dearborn St.
KANSAS CITY	120 W. 11th St.
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Sales Agencies:

NORFOLK & RICHMOND, VA., Virginia-Carolina Supply Co.
MINNEAPOLIS, MINN., Plumbing & S. F. Supplies Co.
ST. LOUIS, MO., L. M. Rumsey Manufacturing Co.
DENVER, COLO., Kellogg & Stokes Stove Co.

mento valley, but none of them lost heavily. The shop of A. H. Kurch at Rio Vista, near this city, was flooded and word has just been received here that a later flood has inundated the town of Tehama and that considerable damage has been done to Simpson Bros.' large establishment at that place. Railroad tracks are still out in many places and wholesalers are experiencing difficulty in delivering goods to their customers.

Vallejo, Cal.—A new plumbing establishment has just been opened here under the firm name of Murphy & Hardenbrook.

Bakersfield, Cal.—Max. J. Gundlach has sold a quarter interest in his plumbing business to A. Dayton, and the new partner has been taken into the firm.

Oakland, Cal.—This city is installing a salt water fire protection system, and this is nearer completion than the one in San Francisco. Construction work has been commenced upon the power house and it is expected that the system will be in operation by the first of July. The power house is located on the shores of Lake Merritt and the system will cover the business section of the city only. The one in San Francisco is a more comprehensive one and will cover a large part of the residence district as well as the downtown section. These systems will place the two bay cities in splendid shape to combat fire and will soon pay for themselves in reduced insurance rates.

San Francisco, Cal.—The great storm which has been holding California and the coast in its grasp for the past three weeks is at an end from all appearances and fine weather is the rule again. No sooner had the rain ceased when building operations in San Francisco were resumed, and in many cases additional help has been placed on jobs where it is desired to make all possible speed and where the enforced delay during the past several weeks has been seriously felt. Conditions in general may be said to be very favorable for the plumbing and building trades. Permits for the month of December were not large, nor are they expected to be during the present month, but contracts are piling up and there is more than $3,000,000 worth of work contracted for, most of which is rush work. Architects have been very busy for some time, and while no very large buildings are being planned there are a great number of medium sized ones, which is more satisfactory from the standpoint of the plumber. There is no actual construction work on any public buildings now under way, but preparations for work of this character are being made steadily and it will not be long before there will be much of this being done. While the city is very slow in getting started upon its own work it is doing something else besides merely talking about improvements, as can be seen by the fact that work has at last commenced upon the wrecking of the City Hall. The work of taking down the dome has commenced, and as soon as the site can be cleaned up the proposition of erecting a new structure will commence to assume a more definite shape. The site of the old Hall of Justice on Kearny street has been cleared, and is now in shape for rebuilding as soon as plans for a new structure can be made. Other improvements, such as hospital buildings and jail improvements, are under way, and when these are well commenced there will be a large amount of work and the plumbing trade among others will be greatly benefited. There is enough work now in sight to keep plumbers busy for many months, but they cannot expect to employ the great number of men they did during the first year after the great fire. It is to be noted that there is still a tendency on the part of many plumbers to bid at a very low figure on work just to keep their shops going, and profits are still pitifully small for this class of work. There has been an improvement in this respect, however, within the past six months, and with a better understanding between master plumbers it is believed that this condition is being steadily bettered.

Plumbing Legislation

Washington, D. C.—Owing to the many cases of water hammer and leaks in water services which were directly traceable to yard hydrants and water closets in many instances, the District Commissioners have issued an order amending section 110 of the Plumbing Regulations, to read as follows, taking effect March 1, 1909: "Section 110. All hydrants shall be of the type provided with a non-wasting chamber, and otherwise of such material and construction as shall be approved by the engineer commissioner. Any hydrant of wasting or other disapproved type, found to be leaky, or otherwise defective may be condemned by the inspector of plumbing and a new hydrant of approved type shall be installed in place thereof. All hydrants shall be connected to lead water pipe by a 6″ slack in pipe and provided with approved air-tight air chambers not less than 18″ long. The installation of new hydrants will be permitted only on written request of the owner and written approval by the inspector of plumbing."

Trade Literature

From Electric Heat Regulator Company, of Minneapolis, Minn.: An illustrated booklet, 3½x6 inches, describing the Minneapolis Heat Regulator, with Time Attachment and its installation, together with valuable information regarding this appliance. In writing for this booklet, kindly mention "Domestic Engineering."

From the Union Supply Company, of Dundee, Ill.: Calendar for 1909, size 10x18 inches, bearing an excellent and attractive copyrighted picture entitled "Blow!" The illustration is most clever and appropriate as a reminder of the company's product, the Killeen wiping cloth. It must, however, be seen to be appreciated, and we are sure that those fortunate enough to secure a copy of it will value it very highly.

From Consolidated Engineering Co., 40 Jackson boulevard, Chicago, Ill.: "The Van Auken System of Vacuum Heating;" part one of catalogue number 5—94 pages, 5½x8½ inches—illustrated with many cuts of factories and institutions in various sections of the country using this system. The catalogue also contains some valuable information in regard to vacuum heating and a very lucid explanation as to the workings of the Van Auken system, which should prove of interest to all persons interested in the busi-

ness who desire an insight regarding this system. The catalogue is very tastefully gotten up, being printed on a tinted paper which brings out the cuts very clearly. This catalogue will be sent promptly upon application to the Consolidated Engineering Company if it is mentioned that "Domestic Engineering" gave you the tip.

From Harris Smokeless Furnace Company (Inc.), Tillman Building, 307½ Second avenue, North, Nashville, Tenn.: Catalogue, 7½x10 inches, 48 pages, with numerous full-page half-tone engravings and complete description of the Harris Smokeless Furnaces, for which the claim is made that they will burn any kind of fuel without smoke and without sparks escaping from the stack. When writing for this catalogue, kindly mention "Domestic Engineering."

From Haynes-Thompson Company, 1705 Chestnut street, Philadelphia, Pa.: Catalogue A, 9x12 inches, cloth loose leaf binder. This catalogue is printed on highly glazed paper and illustrated with half-tone engravings showing various porcelain enameled goods and also various brass and nickel-plated specialties. If you need a copy of this catalogue in your business write for one and tell them you saw it mentioned in "Domestic Engineering," and you will get it by return mail.

From Miller-Hubbard Manufacturing Company, Sturgis, Mich.: Catalogue, 4x6¾ inches, 64 pages, in an attractive brown and gold flexible cardboard cover. This book is printed on highly glazed paper with half-tone engravings, describing and illustrating the design of their complete line of plumbers' sanitary woodwork and up-to-date brasswork, embodying their latest improvements. A postal card mentioning "Domestic Engineering" will bring a copy of this neat catalogue.

Patents

911,023. Boiler. Viola S. Bean, Manchester, N. H., administratrix of Fred S. Bean, deceased.

911,031. Steam-Trap. Thomas J. Cookson, Cincinnati, Ohio.

911,087. Water-Heater. Walter B. Swindell and Cecil H. Holloway, Raleigh, N. C.

911,095. Pipe-Valve. William B. Vestal, Plainfield, Ind.

911,225. Air-Inlet and Beer-Outlet Bung-Hole Apparatus. John H. Flach, Louis Becker, and John P. Paulson, Denver, Colo.

911,321. Sewage Ejector. William McClintock, New York, N. Y.

911,365. Compressed Stop and Waste Cock. Robert W. Beaton, Pittsburg, Pa.

911,375. Garbage-Burner. John A. Burwell, San Antonio, Tex.

911,434. Bath-Cabinet. Thomas Papworth, Portland, Oreg.

911,485. Water and Gas Box For Service-Pipes. Thomas P. Fitzgerald, Washington, D. C., assignor of two-thirds to William E. De Witt and one-third to Daniel J. Rady, Washington, D. C.

911,486. Water-Closet Coupling. William H. Foulois, Washington Depot, Conn.

911,488. Foot-Rest For Radiators. George W. Gage, Sr., Epping, N. H.

911,541. Ventilator. Charles C. Knauss, Philadelphia, Pa., assignor to Tubular Heating & Ventilating Company, Philadelphia, Pa., a corporation of Pennsylvania.

911,546. Valve. George W. Shields and Bradford Webster, Louisville, Ky.

Burlington, Iowa.—The Russell Sewage Disposal Co. of this city, has finished the installation of its patented sewerless sewage disposal system at Paul Brines' residence at Rushville, Ill.—Adv.

What Heat Costs.

The price of heat per thousand calories has been calculated by a French authority, M. Le Chatelier, from various sources. A calorie is the metric unit of heat, and consists of an amount of it sufficient to raise a gramme of water one centigrade degree. With coal (allowing 12 per cent for ash) the cost a thousand calories is four-hundredths of a cent at the mine, eight-hundredths in the industries and sixteen-hundredths in domestic heating. With electricity it is four-tenths of a cent with a water power plant, one and two-tenths cents in large industries and 11 cents at ordinary city rates. With gas it is seven-tenths of a cent in Paris. Thus for ordinary domestic heating purposes gas is over four times as expensive as coal and electricity is over 68 times as costly.

Ashley System

(Patented March 26th, 1907.)

SEWAGE PURIFICATION AND DISPOSAL WITHOUT SEWERS

The most complete, successful and satisfactory system yet devised.

Discovered and worked out throughout the professional career of Burton J. Ashley, Civil Engineer, dating back to 1890 when the first plant was built.

SCIENTIFIC, SANITARY	SAFE, SUCCESSFUL
No Sewers Needed.	Out of Sight and Mind.
No Chemicals Required.	Highly Scientific.
High DOUBLE PURIFICATION.	No Outlet Required.
NO YARD SPACE REQUIRED.	Rarely Needs Attention.
No Cost to Operate.	No Odor nor Offense.
	No Working Gears.

Purifies and Disposes of the Sewage of Water Closets, Bathtubs, Sinks, Laundries, Shower Baths, Latrines, the same as though you had a sewer and

Does the Whole Work in Your Own Dooryard

The Ashley System is peculiarly adapted to the needs of COUNTRY MANSIONS, SUBURBAN HOMES, SUMMER CAMPS, PRIVATE INSTITUTIONS, SUMMER HOMES, SCHOOLS, FACTORIES.

The better class of persons are demanding advanced expedients to safeguard their Health, as well as to enhance their Comfort.

The Ashley System Does Both

Our experience, technical knowledge, perfection of method and confidence in us as the result of past professional and business experience as Sanitary Experts, should deserve your consideration when you come to advise your customers what to use.

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IT IS MADE IN ONE PIECE WITHOUT LINING

For Price, Quality and Finish It Beats Them All

WILL NOT SWEAT

WILL NOT LEAK

The material in this tank is not affected by water of any kind Weighs no more than wood. Beautifully attractive in design. All claims backed up by knowledge based on actual plumbing experience. All tanks sold under our

ABSOLUTE GUARANTEE

Finished in Natural or Golden Oak or Mahogany and Enamel. All fittings are made in our own plant out of new metal and are heavy and mechanically perfect. All fittings are tested and thoroughly adjusted before leaving our plant.

The W. J. Scully Manufacturing Co.

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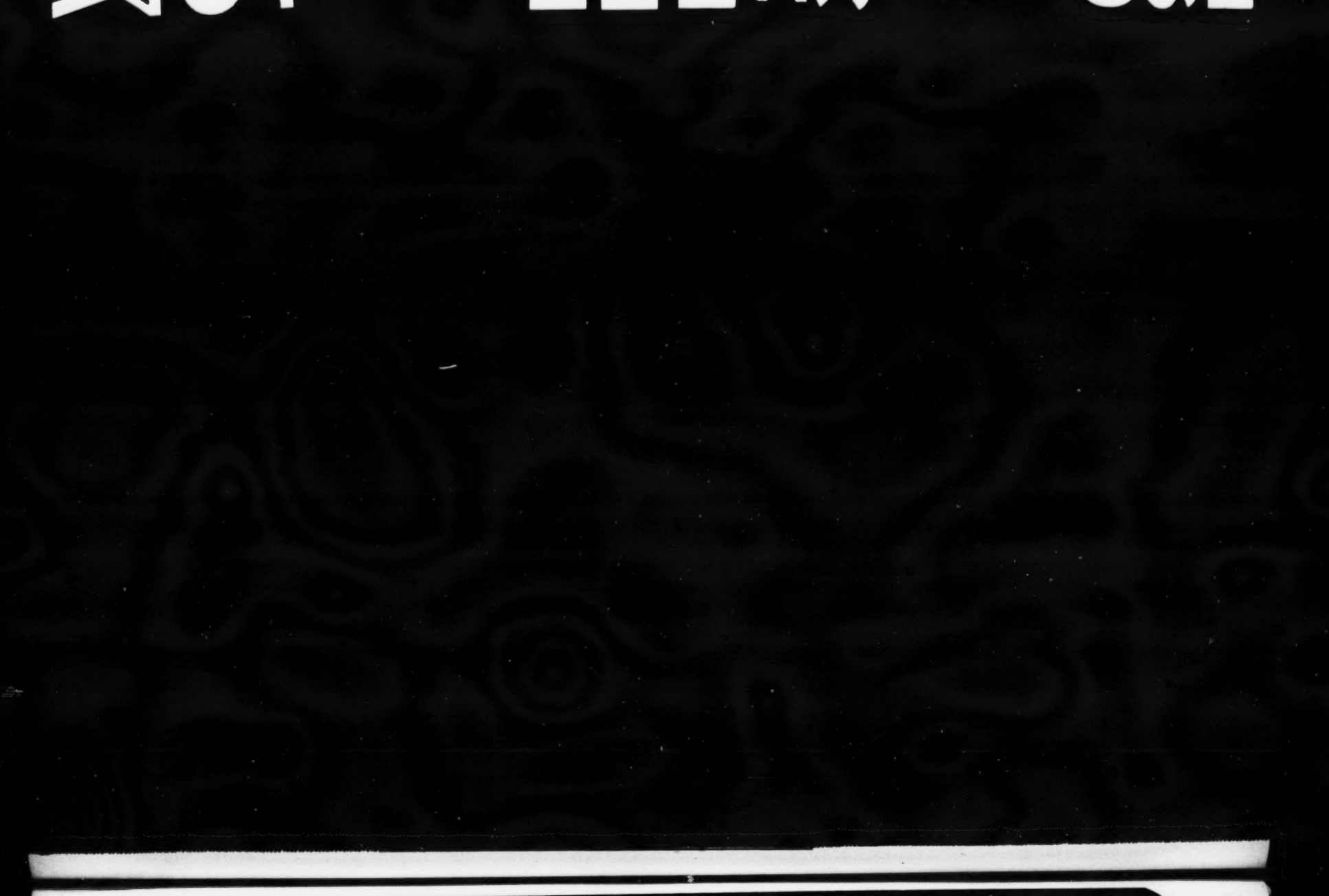
THE ADVERTISEMENTS IN DOMESTIC ENGINEERING ARE INDEXED. TURN TO PAGE XXX.